Intellectual capital management: a critical analysis of conceptual approaches and tools

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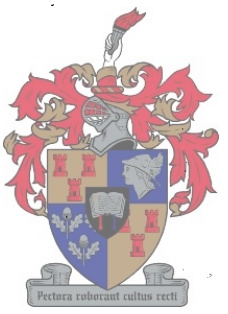

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Declaration

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and has not previously in its entirely or in part been submitted at any university for a degree.

Abstract

It is generally acknowledged that the new millennium is likely to witness a broad based tendency towards being knowledge driven. One manifestation seems particularly important, viz. the realisation that the proactive management of the important organisational resource of intellectual capital (IC) increasingly influences corporate performance. In order for companies to remain competitive in future, it appears essential that an appropriate understanding of the concept of intellectual capital management (ICM) be developed. In view of these observations, there is a need for a critical analysis of extant conceptual approaches and tools to ICM. The objective of the present study was to contribute to an improved understanding of the concept of ICM. To achieve this objective it was considered fundamental to first establish conceptual clarity concerning the resource to be managed through ICM, viz. IC. In a second step, an important task for the achievement of the objective was a critical analysis of extant ICM approaches and tools, to investigate their rationale, origin, and, purpose, as well as to establish advantages and disadvantages inherent in their operationalisation.

Scrutiny of the literature revealed that conceptual vagueness and obscurity surround the term IC, and that no clear consensus has yet been established concerning its anatomy. In spite of the divergent views on the definition and the generic properties of IC a preliminary definition of IC could be established by way of a comparative analysis. It was further demonstrated that the anatomy of intellectual capital can be synthesised into a categorisation scheme involving three distinct building blocks, viz. internal capital, human capital and external capital.

Three ICM approaches and tools were eclectically chosen and critically analysed: i) Sveiby's "Intangible Asset Monitor," ii) Kaplan and Norton's "Balanced Scorecard," and iii) Edvinnson's "Skandia IC Navigator." These were selected because they were considered to encapsulate pioneering efforts and thus represent the status quo on ICM. Analysis suggested that the three models differ in scope and purpose, i.e. different approaches exist as to whether intellectual capital should be managed in isolation or in conjunction with financial capital, and as to whether they should be used for internal measurement purposes or external reporting. Moreover, extant ICM approaches and tools appear to be static in that they account primarily for stocks of intellectual capital, rather than for flows between the individual IC categories.

The salient conclusion of the study was that extant ICM tools are primarily concerned with the *measurement* of intangible corporate assets and not with their *management* per se.

Based on the conclusions of the study a number of recommendations were forwarded, both in terms of a better understanding of the concept of ICM as well as suggestions for the advancement of business applications and theory. The propositions made range from a validation of the three components of IC discerned in the study to a development of specific management directives for ICM.

Auszug

Angesichts der Tatsache, dass seit einigen Jahren in Forschungsinstituten zu Fragestellungen des Wissensmanagements gearbeitet wird und immer mehr namhafte Firmen in diesem Gebiet Projekte starten, kann das Management von Wissen als die groesste Herausforderung fuer das neue Millennium postuliert werden. Besonders wichtig fuer Unternehmungen scheint zu sein, das Management der strategischen Resource Intellektuellen Kapitals als zentralen Hebel fuer die Sicherung der Wettbewerbsfaehigkeit zu erkennen und verstehen. Um ein Verstaendnis des Management dieser Resource zu erleichtern, scheint eine kritische Analyse aktueller konzeptioneller Ansaetze und Modelle notwendig. Das Ziel der vorliegenden Studie war es, zu einem verbesserten Verstaendnis des Konzeptes „Intellectual Capital Management" (ICM) beizutragen. Die Vorgehensweise war wie folgt: Als wichtiger erster Schritt zaehlt die Herstellung konzeptioneller Klarheit ueber die Resource Intellektuelles Kapital, die durch Ansaetze und Modelle gemanaged werden kann. Drei solcher Ansaetze und Modelle wurden im zweiten Schritt im Bezug auf Vor- und Nachteile ihrer Operationalisierbarkeit systematisch analysiert.

Sorgfaeltige Literatuerstudien haben ergeben, dass noch immer konzeptionelle Unklarheit bezueglich des Begriffs Intellektuelles Kapital vorherrscht und dass bisher noch kein klarer Konsens zur Struktur von Intellektuellem Kapital etabliert wurde. Trotz dieser definitorischen Uneinigkeiten und unterschiedlichen Meinungen zu Struktur und Bausteinen, konnte als Ergebnis einer komparativen Analyse eine Definition von Intellektuellem Kapital festgehalten werden. Es wurde gezeigt, dass Intellektuelles Kapital in ein Kategorisierungsschema synthetisiert werden kann, welches die drei Bausteine Internes Kapital, Externes Kapital und Kunden Kapital umfasst.

Drei ICM Ansaetze und Modelle wurden ekletisch ausgewaehlt und anschliessend kritisch analysiert: i) Sveibys „Intangible Asset Monitor," ii) Kaplan und Nortons „Balanced Scorecard," sowie iii) Edvinnsons „Skandia IC Navigator." Die Wahl fiel auf diese drei Modelle, im Wesentlichen weil der inherente Pioniergeist in der Literatur anerkannt ist und ihre Analyse somit einen guten Einblick in den status quo des ICM Forschungsgebietes gewaehrt. Als Ergebnis der Analyse bleibt festzuhalten, dass die Modelle sich in Umfang und Zielsetzung unterscheiden. Unterschiede konnten insbesondere festgestellt werden hinsichtlich drei Fragen: Soll Intellektuelles Kapital in Isolation oder in Verbindung mit

Finanzkapital gemanaged werden? Sollen ICM Modelle fuer interne Wissensbewertung oder externe Bilanzbewertung dienen? Zeichnen sich die Modelle durch eine statische Bestandaufnahme von unsichtbaren Vermoegenswerten aus oder durch die Systematisierung dynamischer Fluesse zwischen den einzelnen Bausteinen Intelletkuellen Kapitals? Die wichtigste Schlussfolgerung, die gezogen wurde, sagt aus dass aktuelle ICM Ansaetze und Modelle sich im Wesentlichen mit der *Bewertung* unantastbarer Firmengueter und nicht mit dem eigentlichen *Management* solcher Gueter befasst.

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Part I: Conceptual Frame

Chapter 1: Introduction

1.1 Background

It is generally acknowledged that the new millennium is likely to witness a broad-based, knowledge-driven tendency in business and society (see, e.g. Quinn, 1992; Stehr, 1994; Toffler, 1990). This could result in a modification of the competitive conditions in which business enterprises are currently operating (see, e.g. Porter, 1997, 1998). If companies are not to lose their competitive position in this changing environment, a complete re-orientation in strategic thinking and management practice is required. More specifically, explicit attention will have to be accorded to the newly emerging phenomenon of "Intellectual Capital" (IC), and to the managerial implications thereof (see, e.g. Sveiby, 1997; Edvinsson and Malone, 1997; Stewart, 1998; Brooking, 1996). The most pertinent environmental trends and discontinuities, as well as their managerial implications for business enterprises, form the background to this study and are briefly sketched below.

1.1.1 Environmental trends and discontinuities, and the increasing importance of intellectual capital

An increasing awareness of the role played by knowledge and IC in the international economy, as well as society in general, can be observed in the current literature.

Countless expressions exist for the contemporary and developing economic and social environment in which business enterprises will have to compete in future. Authors in academia and business practice alike, describe an emerging "dangerous society, age, or era" (Sveiby, 1997). Expressions utilised range from "Global Information Society" (The European Commission, 1994), "Third Wave Economy" (Toffler, 1980; Zey, 1997), "Information Economy" (Carnoy, Castells, Cohen, and Cardoso, 1993), "Information Age" (Kaplan and Norton, 1996), "Post Industrial Society" (Bell, 1974) and "Knowledge Society" (Masuda, 1980; Nasbitt, 1982; Stehr, 1994) to "Knowledge Economy" (OECD, 1996; Stewart, 1998). In the "knowledge era" (Savage, 1996), which is characterised by "future shock" (Toffler, 1970), "unreason" (Handy, 1990), and "smart machines" (Zuboff, 1988), "jumping the curve" seems to be the advisable behaviour in a business environment (Imparato and Harari, 1994)

where new rules for competition are increasingly driven by IC (Roos, 1998; Bontis, Dragonetti, Jacobsen, and Roos, 1999). The potential impact of knowledge on a wide variety of industries seems of such magnitude that some observers refer to it as the "Knowledge Revolution" (Stewart, 1998; Badaracco, 1991).

Possibly as a result of these environmental trends and discontinuities "wealth creation is now [becoming] a mental event" (Edvinnson and Malone, 1997). This opinion is also endorsed by Savage who indicates that with the transition from one historical era to the next, a shift in the source of wealth creation is incidental. Savage argues that a dominant source of wealth creation seems attributable to each era, i.e. land to the agricultural era, labour to the early industrial era, and financial capital to the fading late industrial era (Savage, 1997).

Concomitant with the dawning of the knowledge era, a new form of capital seems to emerge as dominant source of wealth creation, viz. intellectual capital (Quinn, 1992; Roos, 1996; Quinn, Anderson, and Finkelstein, 1996; Stewart, 1998). This organisational resource is enjoying increasing attention from numerous scholars and practitioners. The momentum behind the proliferation of interest in IC may be attributable to the fact that IC represents an increasingly large component of a company's overall market value.

In many instances IC even supersedes corporate book values and is hence commonly referred to as the "value gap" between market and book value (see e.g. Brooking, 1996; Von Krogh and Roos, 1996; Jordan and Jones, 1997; Sveiby, 1997). It is thus not surprising that among these observers, a consensus has transpired as to the significance of IC. It is widely agreed that the gap between market and book value is becoming too wide to be ignored by managers (Edvinnson, 1998; Roos, Roos, Edvinnson, and Dragonetti, 1998; Stewart, 1998; Sullivan, 1998).

Interestingly, while it is widely acknowledged that IC is important, no consolidation has as yet evolved concerning the anatomy and definition of this phenomenon. Different definitions of IC (Edvinnson and Sullivan, 1998; Stewart, 1998; Roos and Roos, 1997) as well as approaches to the categorisation thereof (Saint-Onge, 1996; Edvinnson, 1997; Sveiby, 1997; Sullivan, 1998) are offered in the current management literature. Although similarities between these approaches are identifiable, definitions of IC often seem elusive. Conceptual vagueness and obscurity still appear to surround the anatomy of IC.

1.1.2 Managerial implications: an emerging need for managing intellectual capital

The increasing relevance of IC seems to have provided the impetus for a growing interest in appropriate approaches and mechanisms that may be employed to manage this important resource. Inquiries have therefore been pursued into the rapid diffusion of knowledge companies (Drucker, 1988, 1992; Senge, 1990; Sveiby and Lloyd, 1987; Rheingold, 1993), the increasing impact of knowledge on organisational design and structure (Mintzberg, 1983; Brunsson, 1985; Grenier and Metes, 1992; Czarniawska-Joerges, 1993; Johansen and Swigart, 1994), the shift from traditional towards knowledge enriched production skills (Lloyd, 1988; Pascale, 1990; Toffler, 1990; Peters, 1992; Wheatley, 1995; Darling, 1996), and the rise of the knowledge worker (Schoen, 1983; Leinberger and Tucker, 1991; Coupland, 1991; Drucker, 1993, 1999a, 1999b). All these factors work together in different ways to create new organisational and managerial theory, approaches, tools, and measures relating to intellectual capital management (ICM).

At the heart of this shared interest seems to reside the conviction that adequate managerial attention should be given to the critical resource of IC. A natural conclusion, parallel to the recognition of IC's increasing relevance to corporate market value, would be the acknowledgement of the need to proactively manage it. Neglecting the management of IC, is likely to have severe implications for business organisations. As Roos, Roos, Edvinnson, and Dragonetti predict, "in the modern business world, the business imperative is to manage intellectual capital or die" (Roos, Roos, Edvinnson, and Dragonetti, 1998).

The above-mentioned authors generally agree that ICM is vital for companies wishing to stay competitive in future. No consensus, however, seems to have been reached as to what such management of IC actually entails or should entail. This divergence in views can be seen as a major factor impeding an improved understanding of the concept. The potential merits of the present study should be viewed against the background sketched above. The study intends investigating and clarifying the conceptual approaches and tools to IC, as well as its management.

1.2 Problem Statement

The aforementioned environmental trends and discontinuities (in particular the concomitant increase in importance of IC), seem to call for a substantial rethinking by business enterprises of their currently employed management approaches. It would be beneficial for managers to realise that holistic thinking will have to be increasingly employed in order to navigate companies successfully into the complexity of the knowledge era. A sound grasp of appropriate approaches and tools, which adequately address the dynamics imposed by IC on organisational actions, is incumbent. It would appear that without such knowledge, attention could not be adequately given to IC and its management. Without devoting managerial attention to this critical corporate success factor, a company is likely to ignore a considerable source of value creation. It may face a competitive disadvantage relative to companies that tend to IC in an appropriate fashion.

Obscurity and diverging views, however, appear to prevail as to how managers should manage corporate IC. In particular, the question of whether IC should be managed separately or in conjunction with traditional financial assets, seems as yet largely unanswered. Furthermore, the purpose of ICM seems unclear in the literature. Last but not least, it should also be appreciated that an appropriate understanding of ICM approaches and tools seems to be additionally complicated by the fact that discordant perceptions of the anatomy of IC prevail. In other words, the question of how to manage IC seems to be compounded by the question of what to manage.

The implications of the above indicate the following:

(a) It would be important for an investigation into ICM to establish conceptual clarity concerning the definition and anatomy (constituent parts) of the phenomenon to be managed, viz. IC. This is considered fundamental in view of the fact that a discussion of extant ICM approaches presupposes that clarity prevails as to what exactly ICM means. While scholarly attention has been given to definitional aspects of this new "buzzword" (Petrash, 1994, 1996; Edvinnson, 1997; Sullivan, 1998) and approaches to categorise it (Saint-Onge, 1996; Edvinnson, 1997; Sveiby, 1997; Sullivan, 1998), divergent views seem to be prevalent in the literature concerning its anatomy. An

important first step to providing an improved understanding of ICM, would therefore be to establish clarity concerning the definition and anatomy of IC.

(b) With the rising importance of IC seems to have come the recognition of the need to manage this form of corporate capital. Predicated on the belief that ICM enhances the competitive positions of organisations, a variety of theories has been advanced to manage IC. Interestingly these theories seem to take different stances as to whether the management of IC should be pursued in isolation or in conjunction with financial capital. Some authors focus exclusively on IC (Sveiby, 1997; Stewart, 1998), whereas other authors link ICM to the management of financial resources, thereby adopting a more holistic and integrated outlook on management (Kaplan and Norton, 1996; Edvinnson and Malone, 1997). In view of the different opinions it seems relevant to investigate the appropriateness of the individual approaches to ICM.

(c) As the relevance of IC to corporate success has increasingly been acknowledged, a natural subsequent step by academics and business practitioners has been to devote adequate attention to the management of this critical resource. Although the need to manage IC through formalised frameworks is generally agreed upon (see, e.g. Brooking, 1997; Roos and Roos, 1997; Bontis, Dragonetti, Jakobsen, and Roos, 1999), it appears that no consensus has yet emerged concerning the overall objective for ICM. Thus different interpretations of the overall purpose of ICM are evident in the literature, e.g. measuring for the purpose of external benchmarking (Edvinsson and Malone, 1997; Edvinsson, 1997; Hiebeler, 1996; 1997), or measuring for internal purposes (see, e.g. Kaplan and Norton, 1992, 1996a; Sveiby and Risling, 1986), and sometimes for both (Sveiby, 1997, 1998a; 1998e). In other instances, managing in general is seen as the key assignment of ICM (Stewart, 1998; Sullivan, 1998; Kaplan and Norton, 1996a, 1996b). It should be appreciated that these different viewpoints concerning the purpose of ICM, and the resulting divergence in specific management directives, can be interpreted as a major impediment to an understanding of the concept.

1.3 Objective of the thesis

The overall objective of the thesis is to contribute to an improved understanding of the concept of ICM by way of conceptually clarifying IC, and providing a critical analysis of extant ICM approaches and tools.

1.4 Scope of the analysis

In order to provide a comprehensive insight into the concept of ICM it is essential to analyse a broad spectrum of available international literature. ICM is considered to be a newly emerging topic of growing interest to researchers (Stewart, 1998; Brooking, 1996, 1997; Roos, 1998). Scholars and business practitioners alike increasingly accept its significance to corporate success. In view of this requirement, the literature consulted for this study comprises academic as well as practical sources. A sound balance was sought between the practical relevance of the investigation and academic entrenchment.

It has to be noted, however, that the majority of the available literature is of North American and European origin. This is a rather untypical phenomenon in the business management realm which seems typically characterised by an purely USA bias. While it is obvious that the bilateral bias may on the one hand represent a limitation of the study, it could also be interpreted as further enhancing the study's validity. The North American literature is in fact complemented and validated by European sources. One might argue that the European flavour puts a potential "Americanism" into perspective and vice versa. Hence, it is considered appropriate to delimit the scope of the present study to the available literature of USA/ European origin. This approach, however, has implications when inferences drawn from the present study are applied to newly industrialised countries. The approach thus possibly limits the conclusions and recommendations of the present study to a Western setting.

Within in the delimited scope of USA and European literature, three approaches and tools, critically analysed in part III of the study, have been chosen. After scrutiny of the literature, the choice was specifically made, using an eclectic approach. Based upon the author's understanding the three approaches and tools (viz. Balanced Scorecard, Intangible Asset Monitor and Skandia IC Navigator) encapsulate pioneering efforts and current streams of thought on ICM. It is believed that scrutiny of the selected approaches sheds more light on ICM and thereby contributes to an enhanced understanding of the concept.

It should also be appreciated that the present study acknowledges the existence of constructs that seem to be related to, or overlapping with, the phenomenon under investigation, e.g. knowledge management (see, e.g. Davenport and Prusak, 1998; Allee, 1997; von Krogh and Roos, 1995; Nonaka and Takeuchi, 1995). It would however go beyond the scope of the study to offer a detailed delimitation of ICM and knowledge management. A brief attempt is offered by Sveiby who contends that knowledge management and ICM can best be interpreted as "two branches of the same tree" (Sveiby, 1998c: 1). Wiig (1997) as well as Roos, Roos, Edvinnson and Dragonetti (1998) elaborate on Sveiby's contention and provide more detailed frameworks for illustrating the relatedness and differences between both concepts. The present study shares the views of these authors and concentrates on ICM exclusively.

Ultimately, from the comments made earlier, it should be apparent that ICM appertains to all sectors of the economy (i.e. public, private, and non-profit). In fact, several authors (e.g. Edvinnson and Malone, 1997) stress its applicability to public and non-profit environments. This study, however, concentrates on the applicability of ICM to business enterprises and will not be concerned with investigating its applicability to other sectors of the economy.

1.5 Methodology employed

The basis for the present thesis is deductive in nature and predominantly rests on secondary sources of information, North-American and European, academic and popular, and published as well as unpublished books, articles, research reports, official documents, company annual reports, websites, and other relevant documents that have been collected through library research and internet research. To enhance the validity of the results and conclusions, unstructured preliminary opinions from international experts in the intellectual capital management field have been sought by means of personal communication or the use of electronic mail.

In order directly address the objective of the study, the research is explicitly designed in a logical sequence that connects the collected material to the study's initial research questions and, ultimately to its conclusions and recommendations (Yin, 1994). To this end a qualitative research approach has been applied in which the data processing aims to organise and categorise the collected material in such manner that meaningful analyses and evaluation can follow. At strategic points throughout the study "summative evaluation statements" (McNiff,

Lomax, and Whitehead, 1996) have been made to demonstrate how the individual chapters and sections, individually and combined, contribute to an improved understanding of the concept of ICM. Illustrative case studies have been included when considered appropriate.

The method of investigation exhibits heuristic elements, i.e. past experience was used to solve conceptual and technical problems. The research approach is phenomenological in the spirit of Mumford (1984) who holds that a phenomenological study cannot claim to have a proof of its findings. There is only a reliance on its method and the hope that other people besides its author will regard its descriptions as true and accurate. It is therefore not the aim of this thesis to claim ultimate truth by alleging that the findings are of relevance to all business organisations, nor are the results meant to be valid in all circumstances. The aim is rather to present preliminary findings, which may at best contribute to an overall understanding of the concept of ICM and serve as a basis for further investigations on the topic.

It should additionally be emphasised that the study has been conducted in the spirit of Reason and Rowan who propose a post-positivist paradigm of "objectively subjective" inquiry as an antithesis of traditional positivist research methods (Reason and Rowan, 1981). The authors suggest that their paradigm constitutes a synthesis of "naïve inquiry and orthodox research" (Reason and Rowan, 1981: xiii). Hence, this paradigm would in principle be applicable to the present study due to its combinatory approach of scientific method and subjective reasoning.

1.6 Structure of the presentation

This study is presented in three parts and seven chapters.

1.6.1 Part I: Conceptual frame

Part I comprises chapters 1-3, and presents a general introduction to, and conceptual frame of reference for, the concept of ICM by providing an improved understanding of the resource to be managed, viz. IC.

Chapter 1 serves as an introduction to the thesis and includes a general background section in which relevant environmental trends and discontinuities and their managerial implications are briefly outlined. After the statement of the problem which motivated this thesis, the objective

of the study follows. The scope within which the analysis was made, is subsequently delineated. Thereafter the methodology utilised is briefly sketched with reference to the individual epistemological (theory of knowledge) and methodological assumptions which have been adopted for the purpose of the present thesis. Finally the structure of the thesis is presented in order to demonstrate the flow of argumentation.

Chapter 2 reports the findings of a review of the literature on IC. Particular emphasis was placed on an analysis of definitions and properties of, as well as approaches to, the categorisation of IC. A variety of scholarly and practical research efforts eminent in the management research realm, were investigated to establish inherent commonalities and differences. The ultimate objective of this exercise was to synthesise current thought on the anatomy of IC and to provide a preliminary definition of IC, i.e. to establish clarity concerning the resource to be managed through ICM.

Chapter 3 serves as an essential background and basis to the development of an improved understanding of ICM. It is laid out in case study format and indicates the potential managerial dangers of neglecting IC as an important source of corporate value creation. The insights gained throughout the discussion emphasise the potential of management approaches that accord explicit attention to corporate IC. Before such ICM approaches and tools are critically analysed, however, the need for these models would have to be established. The purpose of this chapter is to demonstrate the need for ICM by way of illustration of the generic importance of IC in a wide spectrum of industries.

In summary, the purpose of part I is to provide the conceptual frame for the following part of the discussion. This is done by, firstly, conveying an introductory picture of the field of study to be covered; secondly, by providing a definition of and approach to anatomise IC; and thirdly, by demonstrating the need to manage IC. Thus, part I establishes conceptual clarity of IC, the resource to be managed through ICM, with the ultimate objective of contributing to an improved understanding of ICM. Such improved understanding represents the platform for an examination of approaches and tools that are designed for the management of this organisational resource, which follows in part II.

1.6.2 Part II: Critical analysis of extant intellectual capital management approaches and tools

Part II consists of the three constituent chapters 4-6. The analyses in part II are built on the insights gained throughout part I. Based on these insights, the analyses in part II can proceed to investigate approaches and tools that attempt to manage IC.

Chapter 4 contains an analysis of Sveiby's Intellectual Asset Monitor - a tool with a specific focus on the management of IC. Chapter 5 deals with Kaplan and Norton's Balanced Scorecard - a holistic performance measurement tool. Chapter 6 presents Edvinsson's Skandia Navigator - an ICM approach and tool, drawing from both foregoing approaches. A thorough understanding of these approaches and tools will be developed in order to improve an understanding of the concept of ICM as currently portrayed in the literature. The objective of part II is to uncover implicit assumptions, individual premises, and operational environments where each tool is designed to be deployed. Particular emphasis will be given to the inherent limitations of these ICM approaches and tools, by way of critical examination of their sophistication in managing IC in a wider context of corporate management.

The objective of part II suggests that, for expository purposes, the individual chapters be structured analogously. Hence, throughout chapters 4-6 the origins of the individual approaches and tools are firstly elucidated. With the origin appreciated, the rationale and purpose of the approaches and tools can better be understood. Based on these insights, analysis proceeds to critically examine the relative level of sophistication of each ICM tool in catering for the concept of IC as was investigated in part I.

In summary, the purpose of part II is to provide a good grasp of extant ICM approaches and tools. It is believed that together with part I, part II contributes to an improved understanding of ICM.

1.6.3 Part III: Concluding observations and recommendations

Part III consists of chapter 7. Its purpose is to convey an overall encompassing view of the study. To this end the main findings of the study are summarised, and the most pertinent conclusions and recommendations for an improved understanding of the concept of ICM are

given. In addition to this recommendations concerning the promotion of business applications and the advancement of theory development are made and prioritised.

1.7 Summary

Chapter 1 provides the background against which the study was conducted. The problem which motivated the objective, is outlined. Thereafter the scope and methodology of the study are discerned. Subsequently the structure of the thesis is presented in terms of parts and chapters.

Chapter 2: A preliminary definition and an anatomy of intellectual capital

2.1 Introduction

A great number of scholars and practitioners have recently proclaimed that the real value of many companies resides not in brick and mortar, or financial capital, but in their IC (see, e.g. Roos and Roos, 1997; Sullivan, 1998; Stewart, 1998). Considerable conceptual confusion, however, appears to exist concerning this resource to be managed through ICM. Close scrutiny of the literature suggests for example that the buzzword IC is used for a variety of phenomena, including company knowledge (Stewart, 1998), invisible assets (Itami, 1987), intangible assets (Sveiby, 1997), or corporate culture (Johnson, 1994; Lank, 1997; Jordan and Jones, 1997; Hall, 1998). Furthermore, no clear consensus seems to have emerged as to how IC can best be defined, and discordant perceptions of the anatomy of IC can be observed (see, e.g. Sveiby, 1997; Edvinsson and Malone, 1997; Sullivan, 1998; Saint-Onge, 1996). The divergence in view as how to define and anatomise IC could impair an appropriate understanding of ICM. It would appear, in fact, that the level of sophistication of ICM approaches and tools is convoluted by discordant perceptions of the anatomy of IC. In other words, the question of how to manage IC is likely to be compounded by the question of what to manage. As some observers have perceptfully suggested, "the way you conceive of knowledge influences the way you manage it" (Roos and von Krogh, 1996b: 334). Thus, an important conclusion drawn from an extensive analysis of the current status of research on ICM, is that developing a preliminary definition of IC as well, as a clear understanding of the anatomy of the phenomenon to be managed, is critical.

The purpose of this chapter is to contribute to the conceptual clarification of IC through a comparative analysis and synthesis of extant conceptualisations of the resource that ICM seeks to manage. This is done with the ultimate aim of clarifying the concept of ICM as such. To this end, the chapter is presented in four main sections: Firstly, a review and analysis of properties and definitions of IC are presented, which will be concluded with a preliminary definition of IC. The second section is concerned with an analysis of extant approaches and models to categorise IC. Building on these insights, the third section provides a comparative analysis of these approaches in order to reveal inherent commonalities and differences that offer a synthesised view of IC.

2.2 *Definitions and properties of intellectual capital*

Although IC seems to be a hotly debated topic and the need to manage it has clearly been established throughout current literature, some observers accept and justify the prevalent confusion by describing IC as an ineffable phenomenon (Edvinsson and Malone, 1997), or suggesting that synthesis may be premature (Spender and Grant, 1996). This study shall take a different stance.

It would appear that a clarification of IC is a fundamental starting point for a discussion on ICM. The conceptual confusion surrounding the new buzzword IC can best be illustrated by reference to pertinent examples portraying the terminological disagreement among scholars and practitioners. While the term IC itself is frequently used in the literature (see, e.g. Stewart, 1998; Edvinsson and Malone, 1997; Brooking, 1996; ICM Group, 1999; IntellectualCapital.org, 1998; Hudson, 1993; Bontis, Dragonetti, Jacobsen, and Roos, 1999), other expressions are also in circulation, some of which are applied synonymously, while others refer to subordinate concepts of IC. Yet others comprise similar concepts with slightly different meanings. To name but a few, Klein and Prusak (1994) use the term "intellectual material," whereas Sveiby (1997) speaks of "intangible assets" and Allee (1999) of "intangible enterprise assets". Expressions such as "intellectual assets" (Sullivan, 1998; Edvinsson and Sullivan, 1996), "knowledge capital" (Porter, 1997), "core capability" (Leonard-Barton, 1995), and the term "knowledge" in general (Nonaka and Takeuchi, 1995; Prusak, 1999; Petrash, 1996) are also frequently referred to.

2.2.1 Intellectual capital – the dictionary definition as a starting point

In view of the endeavour to clear up some of the conceptual confusion surrounding the term, a good place to start would be an internationally recognised dictionary. To begin with the first part of the term, Hornby's (1989: 652) "Oxford Advanced Learner's Dictionary" provides the following description of the word "intellectual": "(1) of the intellect; (2) interested or able to deal with things of the mind (e.g. arts, ideas for their own sake rather than practical matters);" "Intellect" in turn, is depicted as "power of the mind to reason and acquire knowledge (contrasted with feeling or instinct)."

An interpretation of these definitions leads to the inference that the concept of IC is not about capitalising intuitive hunches, i.e. instinctive wisdom or feelings based on emotional

inspiration. Rather, it deals with articulable, reasonable, knowledgeable and substantial fruits of the mind, i.e. with corporate knowledge. It claims intangible and tangible dimensions, which do not mutually exclude, but actually complement each other.

Further consultation of the dictionary reveals that the second part of the term IC, the word "capital" has, inter alia, the following meaning attributed to it (Hornby, 1989: 167): "wealth or property that may be used to produce more wealth." In addition to the first part of the term, which alludes to a duality of tangible and intangible aspects, the second part of the term IC is inherently about value creation. It is useful to bear the dictionary definition in mind when reviewing some of the more complex definitions in the current literature on the topic.

2.2.2 The term intellectual capital in the research literature

The first use of the term IC is attributed to the noted economist John Kenneth Galbraith, who in 1969 wrote in a letter to economist Michael Kalecki:

> "I wonder if you realise how much those of us in the world around have owed to the intellectual capital you have provided over these past decades" (cited in Sveiby, 1998c).

According to Galbraith, IC incorporates a degree of intellectual action implying that it is likely to be a dynamic, rather than a static form of capital such as financial capital (Edvinsson and Sullivan, 1996: 358). A key element in Galbraith's analysis is the conception of IC as characterised by two properties, viz. it (1) creates value and (2) constitutes a corporate asset.

It seems that more recent conceptions of properties pertaining to IC do not significantly differ from the two given by its first proponent. Thus, the potential contribution of IC as a corporate asset to organisational value creation is well established in the literature. Stewart (1994), for instance, in an article entitled "Your company's most valuable asset: intellectual capital" views IC as "something you cannot touch but still makes you rich." The interpretation of this author seems to echo Galbraith's two properties, even if implicitly. "Becoming rich" might be interpreted as an informal paraphrase for the concept of value creation. In the title of the article he refers to "most valuable assets", which are further specified as intangible. Wiig endorses Galbraith and Stewart's opinion by regarding IC as "wide value of intellectual assets" (Wiig, 1997: 399). Similarly, for a variety of authors, IC has to be profitable, and a

number of scholars proclaims that IC is knowledge that can be converted into profits (Prusak, 1999; Davenport and Prusak, 1998; Sullivan, 1998). As far as Galbraith's second property of IC as a corporate asset is concerned, Stewart (1998) agrees with before mentioned authors and conceives of IC as knowledge. In his book, "Intellectual capital: the new wealth of organisations" Galbraith's first property, value creation, is equated to wealth and it is stated that IC is "organised knowledge that can be used to create wealth" (Stewart, 1998: x). In other words, IC contributes to achieve and sustain corporate competitive advantage. Petrash (1996), the Director of Intellectual Asset and Capital Management for the Dow Chemical Company, approves this view by defining IC as knowledge with potential for value.

To this perspective could also be added the view of the stock market which increasingly acknowledges IC, while typically invisible on corporate balance sheets, as an indicator of an organisation's future earning capability (Edvinsson and Sullivan, 1996; Edvinsson, 1997). In other words, it seems IC will be creating value in future by invisibly enhancing a company's market value. Similarly, Security and Exchange Commission (SEC) commissioner Wallman (in Edvinsson and Malone, 1997: 3) views IC as "assets currently valued at zero on the balance sheet." Edvinsson (1997: 367) elaborates on the idea of IC's future earning potential by saying that it enhances a company's market value. He proposes viewing IC as the value gap between a company's market value and book value. He further argues that the market value often exceeds the respective book value immensely and that the gap between the two can be seen as a fundamental source of organisational value creation.

Another debate evolves around the issue whether the asset in question is tangible or intangible. Unlike Stewart (1994, 1998) or Brooking and Motta (1996) who share the contention that IC consists of intangible assets, Klein and Prusak (1994) refer to intellectual material that has been formalised, captured, and leveraged, i.e. they refer to intangible assets that have been transferred into tangible ones. One of the most best-known approaches to categorising knowledge is to adopt Polanyi's (1958, 1966) explicit/tacit taxonomy (see, e.g. Nelson and Winter, 1982; Teece, 1998; Spender, 1996; Grant, 1996; Winter, 1987; Hedlund, 1994). Doing so attributes tangible as well as intangible dimensions to corporate knowledge and thereby to IC. Revisiting the literary definition of "intellectual" would reinforce the dual nature of IC assets and would seem to reveal that tangibility/intangibility need not be viewed as a dichotomy, but as complementary.

2.2.3 Towards a definition of intellectual capital

Recalling the foregoing definitions of IC, it appears that most scholars and businessmen agree upon the two properties of IC as originally identified by Galbraith in that IC constitutes firstly, a value-creating entity, and secondly, a corporate asset. Moreover, a general consensus seems to have emerged concerning the first property. In most definitions the word "value is explicitly stated, in a few instances it is specifically emphasised and paraphrased with "wealth" (Stewart, 1998), "profit" (Sullivan, 1998), or "value gap between market value and book value" (Edvinsson, 1997). But the original meaning seems unchanged.

Analysing Galbraith's second property in more detail, however, reveals that unclarities and different views abide which might be the cause for the conceptual confusion outlined at the beginning of this chapter. While research consolidates around the view of IC as corporate asset, controversial opinions as to *which* corporate assets fall under the heading IC seem to cause this confusion. Likewise, revisiting the literary definition of "capital," discloses that the sum of tangible and intangible assets work together to produce wealth or property in order to sustain competitive advantage. This is in line with Galbraith's suggestion that IC creates value. Nevertheless, the corporate assets that constitute IC remain a contentious issue. To use the dictionary analogy, it is unclear what the term "intellectual" connotes in a business context.

On the evidence of the above-analysed definitions and properties of IC as prevalent in the current management literature, the following preliminary definition of IC can, for the purpose of the present study, be suggested:

Intellectual Capital

- is an important source of value creation, and thus
- contributes to sustainable competitive advantage;
- constitutes the value gap between book value and market value, which typically
- is invisible in the corporate balance sheet;
- has the potential to enhance a company's future earning capability;
- consists of tangible and intangible intellectual assets.

In summary, based on the analysis of extant definitions and properties of IC, a preliminary definition of the phenomenon of IC has been given. The attempt to provide an insight into the concept of IC, utilising Galbraith's two properties as a template, revealed that IC is generally perceived as a source of value creation, whereas the discussion of which assets actually constitute IC, did not lead to clarity.

A general consensus seems to have been reached regarding the different constituent components of IC, whereas no consolidation seems yet to have emerged as to what range of assets, whether tangible or intangible, coalesces into IC. As a result, various divergent building blocks of IC are prevalent in the current management literature, which seem to make the anatomy of the concept elusive. In order to contribute to the conceptual clarification of IC, the subsequent section provides an overview of extant approaches to, and models of, its anatomy.

2.3 Major anatomical models of intellectual capital

Reviewing and summarising all approaches to anatomise IC as evident from the literature, would be a futile effort with little value. Therefore, in an attempt to balance the complexity of the subject with a comprehensible mode of presentation, the analysis is limited to four prominent models. These represent, based upon the author's understanding, the most eminent approaches in the field and have been developed by recognised practitioners and academics (Saint-Onge, 1996; Sveiby, 1997; Edvinsson, 1997; Sullivan, 1998). The approaches to be discussed are well established and extensively listed by other authors, which can be interpreted as further enhancing the validity of these models.

2.3.1 Saint-Onge's model

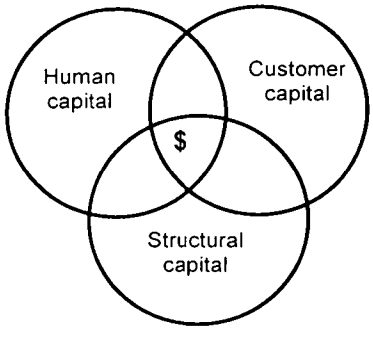
Hubert Saint-Onge is the former Vice President: Leadership Organisation and Leadership Development, for the Ontario based Canadian Imperial Bank of Commerce (CIBC) and now holds the position of Vice President: People, Knowledge and Strategies at Mutual Life of Canada. Saint-Onge's approach to IC is therefore obviously inspired by a practical application perspective. According to him, the CIBC had devoted many years to the understanding of this complex phenomenon. The roles of both tangible and intangible aspects of knowledge in the various categories of IC had been investigated, along with different ways of encouraging

value creation in these elements (Saint-Onge, 1996). This endeavour culminated in the identification of three key categories of IC, viz.:

- Human capital – the capabilities of the individuals required to provide solutions to customers.
- Customer capital – the depths (penetration), width (coverage), attachment (loyalty), and profitability of customers.
- Structural capital – the capabilities of the organisation to meet market needs.

To visualise the three listed categories, Saint-Onge proposes the integrated layout illustrated in figure 2.1.

Figure 2.1: Hubert Saint-Onge's model of intellectual capital



Source: Westberg and Sullivan, 1998: 71.

Saint-Onges's approach to the anatomy of IC assigns special importance to the translation of intangible IC dimensions into tangible forms of knowledge, so that knowledge can be shared and continually renewed (Allee, 1997: 37). This emphasis is visualised by the intersections of the three circles, each representing a form of corporate capital. Saint-Onge explains the interrelation and the importance of the alignment of all three circles as follows:

> "If the structural and human capital are not minimally aligned, it is the customer who loses. Customer capital are the clients or customers that pay us for what we do and produce – they are our lifeline to the future" (Saint-Onge, in Hall, 1998: 44).

The section where human, structural and customer capital merge into one another is characterised by its "dynamic internal cohesiveness" (Westenberg and Sullivan, 1998: 71)

which is deemed to enhance the company's future performance, i.e. it is this section that ultimately creates profitable value for the company.

2.3.2 Sveiby's model

Karl Erik Sveiby is chief executive officer of the consulting company "Sveiby Knowledge Management" and former Executive Chairman and co-owner of Ekonomi+Teknik Förlag, one of Scandinavia's largest publishing companies in the trade press and business press sector. Currently he is also research fellow at Queensland University of Technology in Australia, where he investigates IC related issues (Sveiby, 1999). His outlook on IC is thus characterised by a combination of practical and academic interests. Similarly to Saint-Onge, the range of building blocks forming IC, as conceived by Sveiby, comprises three components, and the taxonomy presented is also threefold. An illustration of these three kinds of intangible assets is provided in figure 2.2.

Figure 2.2: Sveiby's taxonomy of intellectual capital

Intangible Assets		
External Structure	Internal Structure	People's Competence

Source: Sveiby, 1998c: 2.

According to Sveiby (1997: 10-11), the individual components are defined as follows:

- Employee competence: It involves the capacity to act in a wide variety of situations to create both tangible and intangible assets. Individual competence cannot be owned by anyone or anything except the person who possesses it.
- Internal structure: It includes patents, concepts, models, and computer and administrative systems. The internal structure is created by the employees and is generally owned by the organisation.
- External structure: It refers to relationships with customers and suppliers, brand names, trademarks, and the company's reputation or image. Some of these assets can be considered legal property, but investing in external structure is not regarded possible with the same degree of confidence as investments in internal structure.

Employees, according to Sveiby (1997: 8) "are the only true agents in business." All corporate assets and structures, whether tangible or intangible are interpreted as the result of human action. It is argued that people working in a business enterprise direct their efforts primarily in two areas: first, outwardly when engaging with customers; and second, inwardly when maintaining and building the company. When employees engage with the market, they are likely to create e.g. relationships with customers or suppliers, as well as an image, partly owned by the company, in the marketplace. This is what Sveiby refers to as external structure.

An internal structure, however, is created when efforts are directed inward. Both structures are regarded as knowledge structures and form two categories of IC, or to use Sveiby's term of preference, "intangible assets." The third component is constituted by the corporate workforce and labelled "employee competence." Thus, an important preliminary observation to be made from Sveiby's anatomy of IC is the predominant importance he accords corporate employees. This must be kept in mind with regard to Sveiby's ICM model, the "Intangible Asset Monitor," which will be critically discussed in chapter 4.

2.3.3 The Skandia model

Skandia, an internationally operating and Swedish insurance company, is commonly referred to as a pioneer in implementing IC theory. An IC function has been established, headed by Leif Edvinsson, who was appointed the first Director of Intellectual Capital. He is widely acknowledged as one of the world's leading experts in the field. Against these facts, the Skandia approach is clearly inspired by a practical orientation, similar to that of Saint-Onge. As has been argued previously, Edvinsson considers IC primarily as the hidden values constituting the gap between market value and book value (Edvinsson, 1997). Hence the equation

$$\text{Market value} = \text{Book value} + \text{IC}.$$

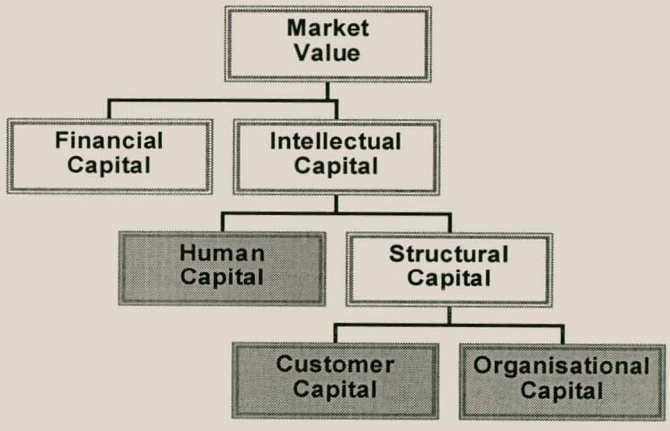
In 1992 when Skandia started stock-taking of the hidden IC values, a list consisting of more than fifty valuable items such as trade marks, concessions, customer databases, IT systems, or key persons was designed. Since the list was perceived as too long and unmanageable its items had to be grouped into fewer, but decisive categories. In a first attempt, Skandia

established two major categories, the human dimension and the structural dimension, which led to a simplified definition of IC:

IC = Human capital + Structural capital

Those dimensions that are "left behind when the staff has gone home," according to Edvinsson, are referred to as structural capital. Ideally, "human capital is translated into some kind of structural capital so that the company is able to add something beyond the staff each year" (Edvinsson, 1997: 368). Thus, each year more structure and thereby IC is emerging. In accordance with Sveiby (1997), Edvinsson emphasises the fact that human capital cannot be owned, it can only be rented. On the other hand structural capital can, from a shareholder's point of view, be owned and traded. Exhibiting several dimensions the model may accordingly be subdivided into several constituent parts. These parts, or "building blocks," are visualised in figure 2.3, which illustrates Skandia's IC model and also integrates the above equations.

Figure 2.3: Skandia's intellectual capital model



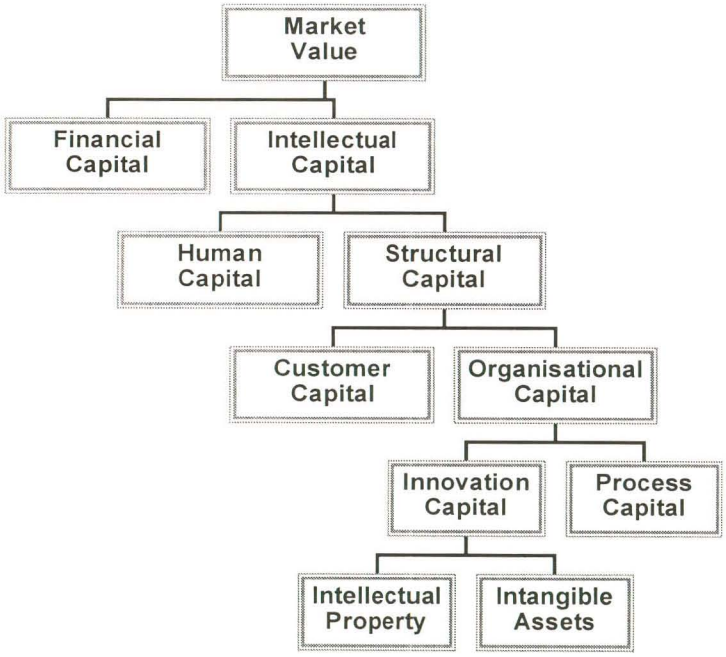
Source: Adapted from Edvinsson, 1997: 369.

As evident from figure 2.3, the Skandia IC model is built on a successive reduction approach that commences with the market value, from which the financial capital (i.e. a company's book value) is deducted. What is left as balancing item is intellectual capital with its two components, human and structural capital. If human capital is deducted from intellectual capital, structural capital remains as balancing item. According to Edvinsson, the component

left behind when the employees leave the company, viz. structural capital, can be further split into customer capital and organisational capital (Edvinsson, 1997).

Edvinsson's approach to categorising IC, being threefold (as illustrated by the shaded boxes in figure 2.3, i.e. those categories that are atomic in the sense that they are not subdivided further) is structurally similar to Saint-Onge's and Sveiby's approaches. Subsequently, however, Edvinsson provides a more detailed perspective and further divides organisational capital into two additional building blocks. Within organisational capital the value of process capital could be deducted, resulting in innovation capital as balancing item. Figure 2.4 illustrates how the Skandia approach complements the two previous models.

Figure 2.4: Skandia's intellectual capital categorisation



Source: Edvinsson, 1997: 369.

An interpretation of the individual components of Skandia's IC model is offered by Wiig (1997: 401):

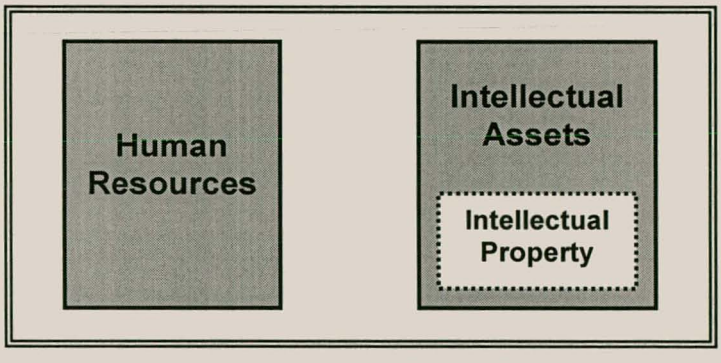
- Human capital refers to the employees' competencies and capabilities. If an organisation for example educates its staff, it increases its human capital. Human capital is usually viewed as a smaller component than the structural capital.

- Structural capital is the result of intellectual capital and is reflected in data, knowledge bases or documents. As argued before, it is depicted as "what is left after the staff has gone home."
- Customer capital is represented in the value of the company's relationship with its customers.
- Organisational capital consists of embedded knowledge assets in the areas of processes and innovation.
- Process capital refers to the company's value creating processes such as the organisational structure, management practices, systems and procedures, infrastructure, computer systems etc.
- Innovation capital comprises both explicit knowledge and intellectual assets, which are difficult to identify, e.g. positive culture.
- Intellectual property is an expression for documented and captured knowledge such as innovations, operational practices, patents, technology, educational programmes, corporate knowledge bases, designs, specification of products and services.
- Intangible assets represents the value of intangible assets, e.g. positive culture, community, or image.

2.3.4 Sullivan's model

The fourth model that remains to be analysed has been developed by Sullivan, a founding partner of the ICM Group, a consulting company focusing their activities on value extraction from IC. Similarly to Edvinsson, Sullivan's approach seems to be inspired by a practical mindset. Sullivan's approach to visualise IC is graphically represented in figure 2.5.

Figure 2.5: Sullivan's model of intellectual capital



Source: Sullivan, 1998:5.

It is Sullivan's (1998: 5) contention that IC consists of three components as indicated below:

- Human Resources: These are seen as the firm's "employee intellect." Human resources provide the know-how and institutional memory around topics of importance to the company. This corporate asset includes the collective experiences, skills, and general know-how of all the firm's employees.
- Intellectual Assets: Intellectual assets are the codified, tangible, or physical descriptions of specific knowledge to which the company can assert an ownership right and readily trade in disembodied form. Any piece of knowledge that becomes defined, usually in written form or uploading it into a computer, qualifies as an intellectual asset and can be protected. Intellectual assets represent the source of innovations which firms commercialise.
- Intellectual Property: Intellectual property is an intellectual asset which can be legally protected. Examples include patents, copyrights, trademarks, trade secrets, and semiconductor masters.

2.4 Comparative analysis of anatomical models of intellectual capital

2.4.1 Saint-Onge and Sveiby

When comparing Sveiby's with Saint-Onge's categorisation of IC, it is conspicuous that, notwithstanding the divergent terminology used, both authors essentially agree on the three building blocks of IC. Saint-Onge's human capital largely corresponds to Sveiby's employee competence, as does customer capital to external structure, and structural capital to internal structure. It is difficult to detect major differences since Sveiby, unlike Saint-Onge, provides a more detailed definition of each building block. It nevertheless seems obvious that Saint-Onge has a narrower outlook on customer capital as compared to Sveiby. The latter conceives of external structure in a more broad-gauged fashion, and in addition to customers further building blocks, viz. supplier, brand name, trademark, and company image are incorporated.

Whereas Saint-Onge exclusively ascribes external value to customer relations, Sveiby provides a more holistic picture when valuing external intangible assets. This divergence may be attributed to the differences in professional backgrounds of the two authors. Saint-Onge developed his taxonomy for a bank with a firmly established reputation and brand name,

hence possibly the exclusion of certain intellectual assets in the approach presented. Sveiby, in turn, in his newly established consultancy firm, evidently ascribes additional value to intellectual assets besides customer relations. Brand-building, for instance, might significantly influence the competitiveness of a firm and is consequently devoted separate attention in Sveiby's categorisation of IC.

In summary, despite the different backgrounds of Saint-Onge and Sveiby, the respective anatomical models as offered by the above authors seem to reveal essentially the same approach to categorising IC. In both models three building blocks are identified, with one focusing on the organisation itself, one on the people working within, and the last one on the environment a company is operating in.

2.4.2 Saint-Onge, Sveiby, and Skandia

As figure 2.4 illustrates, it is possible to identify intellectual properties such as patents or trademarks within the component of innovation capital which leaves intangible assets as balancing item (Edvinsson, 1997). This is the point where considerable terminological divergences appear to persist between Edvinsson and Sveiby. Both use the term intellectual assets to denote two different ends of the same spectrum. Sveiby (1997) refers to intellectual assets as a super-ordinate concept of the three building blocks instead of using the term IC, whereas Edvinsson (1997) views intellectual assets as the last balancing item on the agenda, on the same level as intellectual property and as subordinate to innovation capital (see figure 2.4).

The Skandia model is also depicted in Edvinsson and Malone (1997: 52) with the fundamental difference that innovation capital is not further subdivided into the two components of intellectual property and intangible assets. This notion would then render the aforementioned terminological divergences of Sveiby and Edvinsson obsolete. Edvinsson and Malone, in the course of their book seem to renounce completely the use of the term intangible assets, whereas Sveiby continues to explicitly use it synonymously to the term IC. Taking Edvinsson and Malone's abandoning of the term intellectual assets into consideration it might be concluded that Edvinsson and Sveiby's terminological disagreement concerning this term could be seen as settled.

Nevertheless, there still persist differences between Saint-Onge and Sveiby's classifications of IC into three equally weighted parts, as compared to the Skandia value scheme. The reasons for this are twofold. Firstly, as figure 2.4 suggests, Edvinsson and Malone (1997) do not perceive human capital, customer capital, and organisational capital as being placed on the same hierarchical level. According to them, IC in their approach is divided into human capital and structural capital, with the latter being subdivided into customer capital and organisational capital. Hence, the term structural capital incorporates both an inward dimension (i.e. organisational capital) as well as an outward dimension (i.e. customer capital). This approach to IC categorisation interferes with Saint-Onge and Sveiby's more emancipatory perception of three IC categories on the same hierarchical level. Secondly, Edvinsson and Malone's terminology differs in particular from the one provided by Saint-Onge who refers to internal corporate capabilities with the term structural capital. To the confusion of the reader, Edvinsson and Malone, although their way of interpreting structural capital significantly differs from the one applied by Saint-Onge, cite this author to reinforce and illustrate their explanation of structural capital:

> "According to Hubert Saint-Onge the relationship between human and structural capital is a 'double-arrow dynamic.' In Saint-Onge's words, 'Human capital is what builds structural capital, but the better your structural capital, the better your human capital is likely to be"(Edvinsson and Malone, 1997: 35).

One might reason that this conveys the impression of Edvinsson and Malone being inconsistent in their argumentation. This impression is reconciled one page later in their book, where, in a paragraph under the heading "customer capital", the authors explicitly state that

> "the original Skandia model places the valuation of customer relationships under structural capital. But it is interesting to note that in a recently developed IC model, refined by Saint-Onge at CIBC, customer capital is broken out as a separate category, equivalent to structural and human capital. It is an interesting idea, suggesting both that the relationship of a company to its customers is distinct from that of its dealings with employees and strategic partners, and that this relationship is of absolutely central importance to the company's worth. Time will tell whether this distinction is intrinsically valid or merely a means to promote the company to investors and to motivate employees and other stakeholders (Edvinsson and Malone, 1997: 36)."

It is further interesting to note that Saint-Onge and Edvinsson seem to acknowledge the importance of relationships other than with customers although these do not find explicit recognition in their respective categorisation schemes. In this respect Saint-Onge and Edvinsson seem to adopt Sveiby's wider view regarding the outward dimension of IC. This, in addition to the fact that Saint-Onge's model is derived from the Skandia approach and that the authors of the different models mutually acknowledge their -in some instances- slightly distinct opinions, might lead to the conclusion that the commonalities inherent in all three models exceed the differences. On the evidence of these facts, common ground seems to appear. An attempt to articulate this common ground, i.e. to synthesise the three foregoing models could thus be presented as follows: Saint-Onge, Sveiby, and Edvinsson seem to agree that IC can be categorised into three major dimensions, the human, external, and internal dimension. Firstly, the human dimension focuses on individual capabilities, secondly, the internal dimension represents the embodiment of the human dimension. Thirdly, the external dimension involves relationships with non-internal-organisational stakeholders.

2.4.3 Saint-Onge, Sveiby, Edvinsson, and Sullivan

Sullivan (1998: 6), similar to the authors reviewed previously, also speaks of structural capital, but defines it rather unconventionally. Opposed to IC, he views structural capital constituting the "hard assets" of a company. Hence, structural capital in his sense comprises all the assets visible in the balance sheet. This notion is confusing when recalling that structural capital, as has been established throughout this chapter, is commonly conceived of as building block of IC. This in turn would entail that structural capital is part of the "hidden values" (Edvinsson, 1997) which are invisible in the balance sheet (Sveiby, 1997; Edvinsson and Malone, 1997). Therefore, for the purpose of the present study and for the sake of conceptual clarity the term structural capital as proposed by Sveiby and Edvinsson is used, thus dismissing Sullivan's interpretation.

A closer look at Sullivan's (1998) approach to categorise IC reveals that a tangibility/intangibility dichotomy of corporate intellectual assets constitutes the basis for categorisation. The human resource category represents the intangible dimension whereas intellectual assets refer to the tangible counterpart with intellectual property as a sub-form. Although Sullivan essentially endorses the view of the previous observers by emphasising that intangibles can and should be converted into tangibles, his outlook appears relatively

wide and imprecise. Sullivan basically stops defining IC at the point which Edvinsson uses as point of departure for his categorisation process, i.e. the level where IC is divided into human and structural capital (see figure 2.4). Thus, one might equate Sullivan's intellectual assets with Edvinsson's structural capital, with the terminological congruence of the human dimension in both approaches speaking for itself.

To summarise, Sullivan's perception of IC is obviously in line with the conception Saint-Onge, Sveiby, and Edvinsson agree upon. Concerning Sullivan's categorisation approach it remains to be said that there are also no significant differences to the other approaches except for the fact that the one provided by Sullivan would appear to be more superficial and broad in its outlook.

2.5 An attempt at synthesising extant categorisation patterns

Above, current definitions and categorisation patterns of IC have been reviewed and comparatively analysed in order to establish prevalent commonalities and differences. The analysis revealed that most authors assent to Galbraith's early suggestion of two basic IC properties, viz. IC firstly creates value and secondly constitutes a corporate asset. Apart from that, it is believed that IC determines the value gap between a company's book value and its value in the market place. IC typically is invisible in conventional corporate balance sheets and can be interpreted as an indicator for future earning capabilities of an organisation. Moreover, IC seems to have tangible and intangible dimensions and can be categorised into several building blocks. The foregoing discussion of these building blocks has shown that while the authors reviewed are not terminologically congruent, conceptual commonalities seem to make the approaches amenable to synthesis. Table 2.1 attempts to summarise and provide a comparative overview of the findings, by placing the categorisation terminology as applied by Saint-Onge, Sveiby, Edvinsson and Sullivan in perspective.

Table 2.1: Summary of four major approaches to categorise intellectual capital

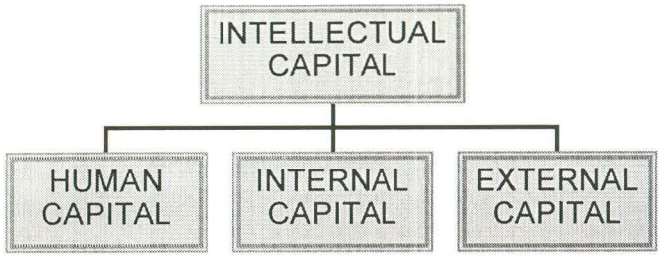
<table>
<tr><th>SAINT-ONGE</th><th>SVEIBY</th><th colspan="2">EDVINSSON</th><th>SULLIVAN</th></tr>
<tr><td>Human Capital</td><td>People's Competence</td><td colspan="2">Human Capital</td><td>Human Resources</td></tr>
<tr><td rowspan="2">Structural Capital</td><td rowspan="2">Internal Structure</td><td colspan="2">Structural Capital</td><td rowspan="2">Intellectual Assets (internal & external)</td></tr>
<tr><td rowspan="2">Customer Capital</td><td rowspan="2">Organi-sational Capital</td></tr>
<tr><td>Customer Capital</td><td>External Structure</td><td>Intellectual Property</td></tr>
</table>

From table 2.1 would follow that the four previously analysed authors generally agree on a threefold classification of IC. At first glance however, it would appear that Sullivan only identifies two categories, viz. human resources referring to the intangible dimension, and intellectual assets comprising the tangible dimension of IC. This obvious conjecture might be rejected by the notion that Sullivan's intellectual asset dimension implicitly comprises an internal as well as an external aspect related to tangible assets (ICM Group, 1999). Sullivan's definition of intellectual assets claims that "any piece of knowledge which becomes defined, usually by writing it down or putting it into a computer qualifies as an intellectual asset." Arguing that employees on the one hand enter e.g. customer or supplier data into the computer and on the other hand calculate e.g. process oriented performance figures, validates the statement that Sullivan implicitly agrees on a subdivision of intangible assets into an external and internal dimension. Hence, there is evidence for the notion that IC is commonly divided into three main building blocks.

An effort to summarise and synthesise the discussed approaches to categorise IC might be presented as follows: IC can be seen as consisting of three different categories, which might be further divided into several sub-categories. The three main categories generally deal with human capabilities, and involve internal as well as external aspects of the business organisation. Therefore, and in an attempt to balance the complexity of the subject with a comprehensible mode of presentation, it is proposed to label these building blocks respectively as human capital (i.e. the skills, capabilities and competencies of the corporate workforce), internal capital (i.e. "what is left when the employees go home"), and external capital (i.e. customer-, social-, supplier-, competitor-, and other stakeholder relationships, the reputation of a company, as well as the brand equity). This terminology is believed to

authentically reflect their meaning and content as used by the anatomical models analysed. An attempt to visualise IC and its three subcategories finds graphic representation in figure 2.6.

Figure 2.6: A triad model of intellectual capital categorisation



As the previous section attempted to show, through synthesis of current IC approaches and models, three key building blocks of this resource have crystallised. Thus it can be argued that IC essentially embraces three constituent components. Although this pragmatic view on the complexity of knowledge in organisations represents an exciting perspective for managers, the merits of a consolidation at the present stage of research development are clearly debatable. The consolidation, while appealing in its conceptual pragmatism, may, inter alia, be overly simplistic, thus calling for a critique of the proposed triad model.

2.6 A critique of the proposed triad model

It should be realised that any conceptualisation of IC is a highly consequential step to the extent that it is used as a platform for building ICM approaches and tools. The suggested three-dimensionality of IC may not capture authentically all subordinate dimensions of this resource. For example, external capital embraces a range of subordinate concepts, such as brand image, corporate identity, customer relations, networking with strategic alliances, corporate social responsibility etc., many of which may be overlooked through the broad anatomical conceptualisation above.

To the extent that this conjecture materialises, ICM approaches and tools that use the three key building blocks as a platform for further investigations may be impaired by the potential negligence of its subcategories, which in turn may have fundamental implications for the management of IC. Potential hazards possibly arising from an inadequate treatment of IC by the suggested model may be indicative of an alternative, more comprehensive approach to form salient building blocks. Such an approach would have the potential merit of a more

authentic representation of the complexity of the resource under investigation. An analysis in this manner would, however, dramatically increase the complexity of its illustrative format. A balance has therefore been sought in this analysis between sacrifice in content on the one hand and a comprehensible mode of presentation on the other.

The merits of the generalist approach pursued as it is pursued here would leave individual companies ample room for tailoring the advocated three-dimensionality to their particular needs and requirements. It is conceivable, for instance, that business enterprises operating in service industries might set foci within their external capital structure differently to those in manufacturing industries. In many ways, it would appear that the suggested approach to the anatomy of IC achieves a balance of illustrative format and the complexity of the phenomenon under investigation. Depending on the operative environment where the approach is to be deployed, it may thus be useful to subdivide the three extrapolated building blocks as appropriate.

2.7 Summary

In view of the increasing importance of IC, a key question seems to be what the structure and categories of this resource look like, what its building blocks are - in brief, how it can be defined and anatomised. Analysis of the literature, however, revealed that no clear consensus concerning the definition and anatomy of this resource has emerged as yet. The divergence in views concerning the concept of IC clearly impairs a proper understanding of ICM. Appropriate conceptualisations of IC can be seen as a fundamental platform from which further investigations concerning the management of this resource, can be pursued. The objective of this chapter was to review and synthesise extant perceptions of IC with the ultimate aim of contributing to an enhanced understanding of the concept of ICM. Thus, the basic insights offered in the course of this chapter are intended to serve as the platform on which the analyses in the following pages are built.

The analysis in this chapter showed that while terminological and conceptual divergences concerning the definition and anatomy of IC abound in the literature, it seems possible to forward a preliminary definition of IC and to draw the salient aspects together using a threefold categorisation scheme.

Upon analysis of the prevailing definitions and categorisations of IC, a preliminary definition of IC was suggested and three basic building blocks of IC were identified, viz.:.human capital, internal capital and external capital.

Chapter 3: The need to manage intellectual capital

3.1 Introduction

This chapter serves as an essential background and basis to the development of an improved understanding of ICM. It is laid out in case-study format and indicates the potential managerial dangers of neglecting IC as an important source of corporate value creation. The potential managerial dangers can be highlighted without involving ICM models. The practical case presented, illuminates the need to manage the concept of IC as it emerged from chapter 2, thereby emphasising the importance of such models.

In the analysis of the case study, it will be demonstrated that an underestimation of the significant impact of IC on corporate performance, mainly emanates from a financial focus, characteristic of traditional approaches to management. These insights could serve to emphasise the potential of management approaches that accord more explicit attention to the need to manage corporate IC.

The objective of this chapter is to demonstrate the need for ICM models by way of emphasising the generic importance of IC in a wide spectrum of industries. For this purpose, the analysis firstly examines a case study involving the advertising agency Saatchi & Saatchi. This will highlight the potential managerial dangers entailed by a negligence of IC. Analysis will then proceed to demonstrate the relevance of IC to industrial settings other than the service variety in general and the advertising business in particular.

3.2 The need to manage intellectual capital – the case of Saatchi & Saatchi*

For a few months in 1988 Saatchi & Saatchi was the largest advertising agency in the world. Yet, because managers solely focused on financial capital, instead of balancing it with the key resource of the company, viz. IC, the agency lost its strong competitive position. A review and analysis of this transition are the concern of this section. Before an analysis can be made of this particular case, a word of qualification would be necessary.

* This case is based on Sveiby and Lloyd, 1987; Sveiby, 1997; Stewart, 1997; Roos, Roos, Edvinsson, and Dragonetti, 1998;

It might be argued that that the inferences drawn from the advertising agency could be of limited pertinence to other branches of industry (e.g. manufacturing industries). As will be demonstrated shortly. IC seems to represent a rising component of the market value of companies in diverse industries. It should therefore be appreciated that in view of the increasing importance IC assumes across industries, the present case would usefully demonstrate the impact of IC on corporate competitive success, irrespective of industry boundaries. This contention seems to be shared by a number of scholars in the field (see, e.g. Sveiby and Lloyd, 1987; Sveiby, 1997; Stewart, 1997; Roos, Roos, Edvinsson, and Dragonetti, 1998) where the Saatchi & Saatchi case is used to illustrate the potential managerial dangers of neglecting IC. Analysis will proceed in two basic steps. Firstly, a review of the decline of the agency is presented. This is followed by an interpretation of this decline using the conceptual lens of IC, and drawing on the insights developed in the course of chapter 2.

3.2.1 The decline of the Saatchi & Saatchi company

An illustration of the decline of the Saatchi & Saatchi agency would need to start in the year in which the agency was founded. In 1970 the brothers Maurice and Charles Saatchi had founded the advertising agency which they started in a rented office in Soho. Within the six ensuing years, the brothers established an image of extraordinary creativeness. The creative agency attracted a number of very skilful advertising professionals and succeeded in developing a portfolio of high-profile customers, which added to its prestige. During this period the Saatchi brothers seemed to have managed their IC well, and the early 1970s was a period characterised by significant growth for. The Saatchi brothers' success led to the agency's initial public offering on the London Stock exchange in 1976. This was considered a revolutionary achievement, since the Saatchi company was the first advertising business that, through going public, overcame the prevalent perception of the advertising industry being "arty," without substance and no underlying physical assets.

The floatation represented a capital platform for building an aggressive acquisition-lead development strategy. Focusing on this aim the brothers succeeded, inter alia, by means of persuasive eloquence to convince investors in London and on the Wall Street to value the company as they would "more substantial" manufacturing industries. As a result, reliable

profitability and good acquisition-lead growth potential was ascribed to the business. This, increased its appeal on the stock exchange.

During the ten years of uninterrupted success that followed the floatation other agencies were acquired at a rate of three per year. In this period, it seems, the founders were able to balance both IC and financial capital. They managed to inspire and preserve a creative spirit, which appears to be essential to successful advertising. This in turn, motivated and encouraged their employees. They also delivered profits, growth, and dividends to their shareholders. As a result, affiliated members of the firm viewed the growing collection of agencies as stimulating their creativity. Investors regarded the dynamic group of companies under the Saatchi & Saatchi umbrella, as credit-worthy as companies traditionally relying on physical assets.

In April 1986, through a secondary issue of stock, 400 million pounds were paid by the city of London for a 47% share of the company. A month later the money was invested in the purchase of the New York agency, Ted Bates. The Ted Bates acquisition turned the Saatchi & Saatchi company into the world's largest advertising group, with billings of 7 billion dollars. This acquisition however would also constitute the turning point in the company's success story, because in that same year the group's first-ever profit decline was recorded. Moreover, a leakage of creative talent had begun to materialise. It became difficult to preserve the creative spirit, which was the cause for more key employees to resign.

The Saatchi brothers underestimated, even disregarded, these warning signals and continued to expand their empire. In 1987 they announced their new strategic aspirations to diversify into several other service industries. The goal was to become a "global one-stop shop of business services including marketing, financial services, and management consulting in addition to advertising" (Sveiby, 1997: 15). Later that year the brothers made known their intention to buy the Midland Bank, one of the United Kingdom's biggest retail banks. The financial community, already concerned by the Ted Bates acquisition, reacted even more sensitively to this announcement. As a result, the company's image on the stock market declined.

At the end of 1988, the group's market value amounted to 636 million pounds, but still compared favourably to its book value of 108 million pounds. Its IC was then valued almost six times higher than its financial capital. Saatchi & Saatchi's IC. Due to several reasons

however the company's IC progressively depreciated. Firstly, the company's reputation as a top creative performer within the profession began to dissolve. It became harder to attract and retain talented employees and to sustain a base of profitable customers. Secondly, as a consequence of this, frustration spread among the executives. In turn, the frustration seems to have led to a decrease in share prices. A year later, by 1989, the Saatchi group was in a financial crisis. By 1993 it was only yielding 20 million pounds a year.

In December 1994, as a response to the considerable profit decline, institutional investors forced the board of directors to dismiss Maurice Saatchi. Protesting Saatchi's resignation, several other executives also left the company, which was then renamed "Cordiant." In an aggressive move Saatchi, together with these executives, and his brother Charles, established a new agency called "Maurice and Charles Saatchi." As a result, Cordiant lost business to the value of 40 million pounds (6% of its total billings). The majority of this business, including customers such as Mars, British Airways, and Dixons went to the brothers' new agency "Maurice and Charles Saatchi." Although Maurice Saatchi's dismissal was invisible on Cordiant's balance sheets, it materialised in a plummeting share price. While the share were previously traded at 8 5/8 on the New York Stock Exchange they immediately fell to 4. Cordiant's market value decreased to two percent of its peak market capitalisation attained in 1988.

3.2.2 Analysis of the Saatchi & Saatchi case using an intellectual capital perspective

The decline of the house of Saatchi & Saatchi can be interpreted as illustrating the perils involved in underestimating the value of corporate IC. It appears as if initially the Saatchi brothers had taken a holistic outlook on their corporate assets. They had managed to maintain a sound balance between their tangible and intangible assets. In the period between 1970 and 1976 the brothers seemed to successfully manage the three constituents of IC as outlined in chapter 2, viz. human, internal, and external capital. They invested in their human capital by employing a number of very skilled advertising professionals. As regards their internal capital, the brothers appeared to create a spirit of creativity within their company, thereby motivating employees to be hardworking and loyal. The creative image and the high-profile customers enhanced the value of Saatchi & Saatchi's external capital.

In 1976, it was their profit track record, which can usefully be interpreted as emanating from the company's IC, that persuaded the London business community to view the advertising agency with the same gravity as any other manufacturing business. Although Saatchi & Saatchi's key assets were intangible and invisible in its corporate balance sheet, the business community agreed to convert parts of their intellectual assets into cash in their initial public offering.

The initial public offering seems to suggest that the Saatchi brothers successfully extracted value from its IC. The capital resulting from a high share rating was however not used to further enhance the company's current stock of IC in order to ultimately support its key business, advertising. Instead, after 1976, the financial capital was used to pursue an aggressive acquisition strategy. More specifically, until that time Saatchi & Saatchi's profit growth had been generated by advertising, with satisfied customers returning with new commissions to the company (i.e. it emanated from Saatchi & Saatchi's external capital). After 1976 most of the growth came from acquisitions. In fact, the Saatchi brothers seemed to have defied their creative core business and their external capital the moment the agency network was used as a vehicle for buying non-advertising businesses.

The Saatchi case demonstrates the risks of ignoring, and failing to understand, the value and importance of IC. Saatchi & Saatchi's IC assets might be compared to a bank account that slowly but steadily depleted after the company's floatation (Sveiby, 1997; Sveiby and Lloyd, 1987). The firm's human capital, consisting of corporate skills, creativity, and talent was devalued when employees left. Consequently the internal spirit of creativity, the strong corporate culture, and particularly the structure of the organisation, lost its coherence, i.e. the internal capital depleted. Finally, the external capital depreciated in value when the creative reputation faded and prestigious customers defected.

The question arising here seems to be whether Saatchi & Saatchi could have succeeded. The speculative answer would be yes - if the brothers had recognised that the value gap between their company's market value and book value equated the value of its IC. Accordingly, if they had seen their competitive momentum lying in their IC and had proactively captured, measured and leveraged it, their agency might still have existed today.

The Saatchi & Saatchi case seems to reveal that the brothers viewed financial capital rather than IC, as their agency's momentum. They thus neglected to adequately manage the three key categories of IC. In this light, it is important to appreciate that such negligence might have an adverse effect on corporate competitive success. Further, it should be noted that IC with its intangible building blocks, can radically affect corporate performance. It might be instrumental in yielding and depleting tangible profits. Hence, a misplaced view of the true momentum underlying business performance, might have detrimental effects on corporate performance. This is a vital observation in view of the objective of the study.

3.3 The need to manage intellectual capital across a spectrum of industries

The Saatchi & Saatchi case was designed to convey an illustrative picture of what the potential results are of neglecting efforts to understand IC as resource endowment and its effects on corporate performance. Although the Saatchi company is an exponent of the service industry, it should be recognised that the inferences drawn could also be germane to industries other than the service-variety. This speculation would need to be substantiated, and the present section is concerned with demonstrating the pertinence of IC to a broad spectrum of industries.

3.3.1 Market value versus book value across industries

In the literature, it is generally contended that corporate success or failure would ultimately be reflected by the stock-market valuation of a company's market capitalisation. Thus the logical conclusion, that an appropriate indicator of IC's pertinence to success, could be the share it has in a firm's total market value. This view is prevalent among a large body of scholars (see, e.g. Stewart, 1998; Edvinsson, 1997; Edvinsson and Sullivan, 1996; Roos, 1996, 1998). As outlined in chapter 2, Edvinsson refers to IC as the "hidden values," constituting the gap between market and book value (Edvinsson, 1997). In a similar vein, Stewart echoes this contention by labeling IC as a company's "hidden gold," thereby implying IC's capability to materialise into tangible value (Stewart, 1998). Roos shares with Edvinsson and Stewart the view that the most valuable part of many companies is reflected in its IC, which has overtaken tangible assets such as real estate and inventories (Roos, 1996; Roos, personal communication, March 23, 1999).

These realisations are reflected in table 3.1. The figures are drawn from the top-five companies of the United States of America ranked according to market value.

Table 3.1: Market value and book value

Company	Market Value (in billions of dollars)	Book Value (in billions of dollars)	IC
General Electrics	169	31	138 (82%)
Coca-Cola	148	6	142 (96%)
Exxon	125	43	82 (66%)
Microsoft	119	7	112 (94%)
Intel	113	17	96 (85%)

Source: adapted from Roos, Roos, Edvinsson, and Dragonetti, 1998: 2.

It should be appreciated that the above companies span a variety of industries. Although the number is limited to five only, it is contended that the selected firms can be seen as epitomes of several industries. They represent a sound basis from which generalisation can be made. All examples clearly show that the market value of all five organisations is many times their book value, i.e. the value of the respective physical capital. In all instances, IC's value represents a total share of market value higher than 50%.

While none of the above companies operates in the service industry, parallels to Saatchi & Saatchi can be drawn. In 1988 Saatchi & Saatchi was valued at 636 million pounds at the stock exchange, compared to its book value of 108 million pounds as documented on corporate balance sheets. The difference between these two figures, i.e. Saatchi & Saatchi's IC, amounted to 528 million pounds, thereby assuming 83% of its total market capitalisation. It is worth noting that General Electrics, representing a traditional manufacturing company, reveals almost the same percentage, viz. 82% when it comes to the ratio of IC to total market capitalisation. This example seems to substantiate that IC also appertains to industries other than service. Moreover, it must be realised that the IC value of all five companies depicted in table 3.1 amounts to more than half of each firms' total market value. The suggestion can therefore be made that it would be paramount for corporate success to attribute managerial attention to this critical resource.

3.3.2 An alternative way of illustrating the wide pertinence of intellectual capital

Taking the measures (i.e. market value and book value) of the foregoing discussion into consideration, one might however hold the view that they would not constitute ideal starting points for an investigation into IC's pertinence to corporate success. Two areas, viz. the market value and the book value, deserve attention in this respect. In the case of the market value measure for a company's total market capitalisation, this criticism might be rejected. The market value can be seen as being the most neutral and objective indicator to serve that purpose, because of external valuation criteria. As regards the second measure applied to determine the value of a company's IC, viz. the book value, it should be emphasised that this indicator might lack substance when endeavouring to evaluate a company's physical assets on an internationally compatible basis. Accounting practices typically vary across nations and even within national boundaries distinct methods of evaluations may prevail, deleteriously affecting comparability of data (Edvinsson and Malone, 1997).

These considerations suggest the potential of an alternative approach to the demonstration of the wide pertinence of IC. The adoption of a more general and reliable measure for a company's physical capital, which is also accounting neutral should be contemplated. To the extent that this measure should firstly be readily attainable by managers. Secondly it should be independent from any particular accounting protocol. Several authors have recently suggested that it would be reasonable to adopt the replacement value of physical assets as an alternative indicator for the book value. The replacement value of physical assets is reflected in the price the company would have to pay to substitute its present assets with new ones (see, e.g. Roos, Roos, Edvinsson, and Dragonetti 1998).

At this point critics might raise the question of the evaluation of irreplaceable, illiquid, and unique assets. In most cases though, explain Roos, Roos, Edvinsson, and Dragonetti, "these assets are not present in the balance sheet in the first place, so they should not be considered in this calculation either" (Roos, Roos, Edvinsson, and Dragonetti, 1998: 127). As the relationship between a company's physical assets and the costs of replacing them seems to constitute a relatively shallow area in management research (Roos, Roos, Edvinsson, and Dragonetti, 1998), further investigations seem to be very much in order. In view of the aim of this section, however, the academic entrenchment of the replacement value seems of minor importance, and the replacement costs are assumed at 2 ½ times the book value. This leads to a re-evaluation of the above companies' IC as illustrated in table 3.2.

Table 3.2: Market value and replacement costs

Company	Market Value (in billions of dollars)	Replacement Costs (in billions of dollars)	IC
General Electrics	169	77	92 (54%)
Coca-Cola	148	15	133 (90%)
Exxon	125	107	18 (14%)
Microsoft	119	18	101 (85%)
Intel	113	43	70 (62%)

Sources: adapted from Roos, Roos, Edvinsson, and Dragonetti, 1998: 3.

Close scrutiny of table 3.2 indicates that it differs from table 3.1 only with respect to the substitution of the book values of the five firms with their respective replacement costs. Resulting from this substitution, the IC value of all firms in table 3.2 has shrunk, in some instances considerably. Except for the case of Exxon, IC maintains its total share of market value higher than 50%. As the figures impart, the ratio between a company's market value and the cost of replacing its physical assets is considerable in most industries. This is not restricted to service industries only. Studying the data of General Electrics, a company with a high degree of physical infrastructure, it becomes evident that its IC assets are also valued higher than its traditional material assets. The data of knowledge companies like Intel, and Microsoft, but also of Coca Cola seem to substantiate this statement. This would suggest that what applies to the business service sector, is in similarly pertinent to traditional physical asset-intensive industries, albeit in varying degrees.

3.4 Summary

The objective of this chapter was to demonstrate the need for ICM models by way of illustration of the generic importance of IC to a wide spectrum of industries. Ultimately this would contribute to an enhanced understanding of the concept of ICM. For this purpose a case study, involving the advertising agency Saatchi & Saatchi was analysed. Analysis showed that a concentration on financials at the expense of ignoring IC, seriously frustrated corporate performance at Saatchi & Saatchi. It was demonstrated that an IC perspective allows for insights, which illustrate the importance of the three components of IC, as they emerged from chapter 2.

After highlighting the pertinence of IC and its management for Saatchi & Saatchi, the analysis proceeded to examine the relevance of IC to industrial settings other than the service variety. To underline the relevance of IC, the market value and book value of a selected number of companies have been contrasted. Using a replacement value approach, it was revealed that the gap between the market value and the book value (i.e. the IC) was in all instances substantial. It was concluded that, in view of these observations, IC assumes wide pertinence to a broad spectrum of industries.

To the extent that the book value represents an increasingly diminishing component of the overall market value of many companies, purely financial foci, might be inappropriate for many corporate environments. This suggests the potential of approaches that accord a more explicit emphasis to IC. The remainder of this thesis critically analyses such approaches.

Part II: A critical analysis of major extant intellectual capital management approaches and tools

Chapter 4: The Intangible Asset Monitor

4.1 Introduction

In chapter 2 it was indicated that the anatomy of IC involves three generic building blocks, viz. internal capital, external capital, and human capital. It was also suggested that ICM models would need to consider all three building blocks of IC. Based on the insights gained throughout part I, the analysis can now proceed to investigate the three most popular extant ICM approaches and tools that are designed to cater for IC. The choice of the respective approaches and tools is eclectic and has specifically been made after scrutiny of the literature. Based upon the author's understanding, these models encapsulate trailblazing research efforts, and balance European with American streams of thought. They thus provide a representative picture of the status quo of ICM research. It is contended that a thorough understanding of these three ICM approaches and tools, of their origins, rationales, and purposes is critical for an improved understanding of the concept of ICM as it is currently portrayed in the literature. The analysis will endeavour to uncover implicit assumptions, individual premises, and operational environments for each tool. Particular emphasis will be given to the inherent limitations of the ICM approaches and tools by way of critical examination of their sophistication in administering IC in a wider context of corporate management. The above areas of investigation form the framework of the analysis in part II of the present thesis.

For expository purposes, the analysis is divided into three chapters, with each chapter being concerned with a critical analysis of one prominent approach to ICM. The present chapter will attempt to critically analyse the "Intangible Asset Monitor," an ICM approach and tool that was developed by Sveiby to manage and measure intangible resources (Sveiby, 1989, 1997; Sveiby and Risling, 1986; Sveiby and Lloyd, 1987). The Intangible Asset Monitor has been chosen because it can be interpreted as the first European ICM approach and tool that accords explicit attention to the three building blocks of IC as identified in chapter 2. The present chapter will firstly attempt to elucidate the origins of Sveiby's tool. With an understanding of the origin, the rationale and purpose of the Intangible Asset Monitor can better be appreciated. Based on the gained insights, an analysis will be made of the approach and tool itself. The investigation is structured using three broad steps. Firstly, the approach to the management

and measurement of IC as presented by Sveiby is discussed. Secondly, an analysis will be given if the Intangible Asset Monitor caters for the three building blocks of IC as conceived of Sveiby. Finally, the level of sophistication of the Intangible Asset Monitor is critically analysed within a wider framework of managerial tasks. Throughout the analysis in this chapter reference will be made to a business case, in order to enhance the theoretical discussion with practical insights.

4.2 Origin, rationale, and purpose of the Intangible Asset Monitor

The origin, rationale, and purpose of Sveiby's Intangible Asset Monitor can be portrayed against the background of related approaches in Scandinavia. They seem to be inherently linked to Sveiby's publishing company "Affärsvälden." The origins of Sveiby's ICM approach and tool are first illustrated. Thereafter, the rationale and purpose are explored.

4.2.1 Origin

The origins for Sveiby's Intangible Asset Monitor are best understood against the background of IC related research initiatives in Scandinavia. From the mid-1980s on, academic as well as practical research, had been undertaken aiming at managing knowledge organisations and measuring intangible assets. Sweden particularly appears to be the "cradle" of European research efforts on ICM. A number of proactive Swedish service companies, such as Skandia, WM-data, Celemi, and KREAB, to mention but a few, seem to form the so-called "Swedish Community of Practice" (Sveiby, 1996). This Swedish community follows two different routes to ICM. One is "Human Resource Costing and Accounting," with Johanson (1996) as its main proponent. Johanson was instrumental in establishing the Swedish "Key Ratio Institute", a databank of Human Resource indicators and measures currently subscribed to by 130 Swedish companies (Sveiby, 1996).

The second, and for the purpose of this study more interesting route, "might for lack of [a] better label be called the 'Konrad' track" (Sveiby, 1996: 1). It consists of managers who primarily engage in monitoring and publicly presenting the intangible assets of the respective companies by use of non-financial indicators (Sveiby, 1996: 1). In 1988 the Konrad Group published its findings in a report edited by Sveiby ("The New Annual Report"). Based on Sveiby and Risling's (1986) "The know-how company," the report suggested a theoretical

framework for publicly reporting intangible assets. The terms "structural capital" and "human/individual capital" were firstly used in "The New Annual Report" (Sveiby, 1989). From the above follows that Konrad's initial aim was to offer a conceptual framework to be used by companies for improving their public reporting, i.e. emphasis was put on an external dimension. Some companies, however, also started using the measure, as proposed by the Konrad Group for internal management and performance measurement purposes (e.g. WM-data, KREAB), thereby transcending the external dimension. Hence, and this is noteworthy, the Intangible Asset Monitor seems to originate from the desire to establish a non-financial measurement system in order to serve two purposes, viz. firstly, to report to external stakeholders; and secondly, to report to internal management executives. This should be kept in mind when examining the rationale and purpose of Sveiby's ICM tool.

4.2.2 Rationale

The rationale for Sveiby's Intangible Asset monitor has been to cater for the competitive realities surrounding his company "Affärsvälden." In 1979 Sveiby resigned his position at Unilever to buy with a group of nine friends the publishing company "Affärsvälden". The company's focus was on editorial content, while the visible production process, i.e. printing was outsourced. Confronted with an organisation characterised by the absence of a physical production process and traditional assets, as well as by a strong competitive situation, the group realised that conventional managerial tools were ill-versed to accommodate the operating environment of the company. The company's operating environment was determined by a substantial stock of invisible and knowledge-based assets that included some of Sweden's best financial analysts, a prominent brand and a well-established network in the business community, i.e. it was determined by a high stock of IC (see, e.g. Sveiby, 1997; 1999). This predominant importance of IC seems to have inspired Sveiby to formulate his well-known "knowledge perspective" of the firm.

4.2.2.1 The knowledge perspective and the "know-how company"

Intrigued by the phenomenon of intangible assets and the managerial implications this phenomenon entails, Sveiby proposed the first theory of the know-how company in 1986 (Sveiby and Risling, 1986). The theory forms the theoretical background of the Intangible Asset Monitor. The underlying rationale is to dismiss what the author calls the "traditional

industrial paradigm" (Sveiby, 1997: 26) in favour of a "knowledge paradigm." The principal characteristics of both paradigms, as Sveiby sees them, are summarised and contrasted in table 4.1.

Table 4.1: The principles of the knowledge paradigm as opposed to the industrial paradigm

Item	Seen with an industrial paradigm, or from an industrial perspective	Seen with a knowledge paradigm, or from a knowledge perspective
People	Cost generators or resources	Revenue generators
Managers' power base	Relative level in organisation's hierarchy	Relative level of knowledge
Power struggle	Physical labourers versus capitalists	Knowledge workers versus managers
Main task of management	Supervising subordinates	Supporting colleagues
Information	Control instrument	Tool for communication, resource
Production	Physical labourers processing physical resources to create tangible products	Knowledge workers converting knowledge into intangible structures
Information flow	Via organisational hierarchy	Via colleague network
Primary form of revenues	Tangible (money)	Intangible (learning, new ideas, new customers, R&D)
Production bottlenecks	Financial capital and human skills	Time and knowledge
Manifestation of production	Tangible products (hardware)	Intangible structures (concepts and software)
Production flow	Machine-driven, sequential	Idea-driven, chaotic
Effect of size	Economy of scale on production process	Economy of scope of networks
Customer relations	One way via markets	Interactive via personal networks
Knowledge	A tool or resource among others	The focus of business
Purpose of learning	Application of new tools	Creation of new assets
Stock market values	Driven by tangible assets	Driven by intangible assets
Economy	Of diminishing returns	Of both increasing and diminishing returns

Source: Sveiby, 1997: 27.

Two aspects deserve attention in table 4.1. Firstly, an important question to be contemplated is the applicability of the knowledge paradigm to different industries. It would appear that the relevance, or irrelevance, of Sveiby's knowledge paradigm to firms in particular industries would ultimately affect the relevance of the Intangible Asset Monitor, which is conceived in this paradigm. Sveiby is, however, not very specific concerning which industries compete within the knowledge paradigm. On the one hand, the author explicitly acknowledges that the

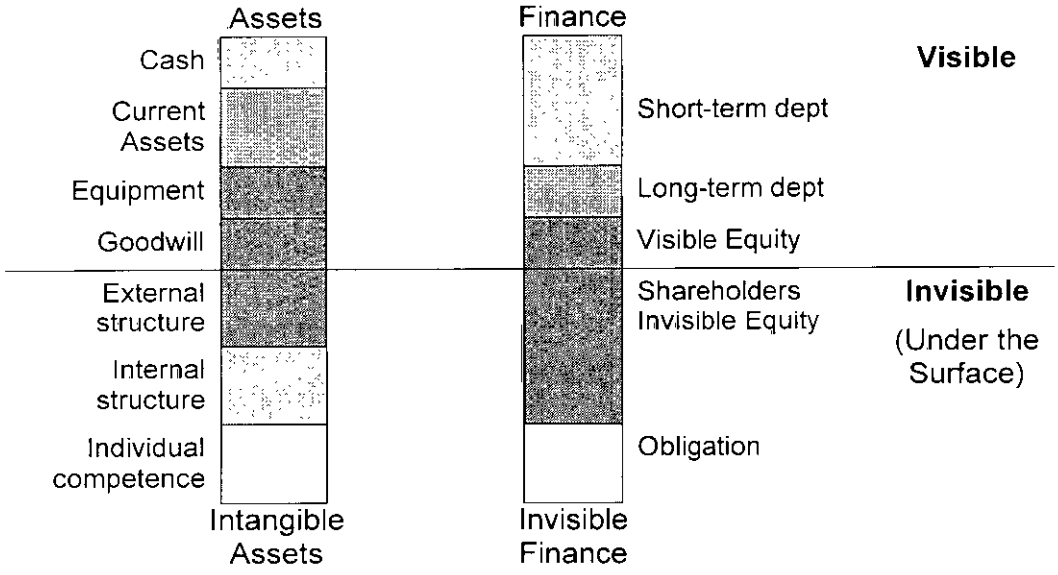
business service sector appertains to the knowledge perspective (e.g. Sveiby, 1997: 28), and that all know-how companies are service companies (Sveiby and Lloyd, 1987: 18). On the other hand, it is also argued and demonstrated that, for instance, pharmaceutical companies (e.g. Astra and Glaxo) generally hold higher proportions of IC to market value than service industries (e.g.Wal-Mart, Mc'Donald's). The same seems to apply to high-tech companies (e.g. Microsoft, Intel, Gentech), media companies (e.g. Springer, Reuters), waste management (Rentokil) and many branded consumer product companies (e.g. Coca-Cola, Hugo Boss, Arnotts) (see, e.g. Sveiby, 1997: 6-8, 1998d: 1). Sveiby argues that even physical asset intensive industries compete according to the rules of the knowledge paradigm. The authors holds that steel companies can be seen as epitomes of traditional, tangible asset intensive industries of the industrial era. Nucor, a company, which has revolutionised the steel industry with millimil technology and a management approach focusing on competencies of individual employees, is given as an example (Sveiby, 1997: 6-7). These observations seem to indicate that Sveiby, in line with many scholars in the field, implicitly assumes a wide pertinence of IC to a broad spectrum of industries.

It should be appreciated that closer scrutiny of Sveiby's work reveals that the Intangible Asset Monitor would represent a tool specifically designed for know-how companies. Know-how companies typically compete in service industries, in which individual employees are the main drivers for performance and IC is thus the crucial resource (see, e.g. Sveiby, 1989, 1997; Sveiby and Risling, 1986; Sveiby and Lloyd, 1987). This explanation seems intuitively plausible, if one recalls from the origin of Sveiby's ICM tool, that it is inherently linked to "Affärsvälden," a service company. For "know-how" companies an invisible balance sheet is constructed.

4.2.2.2 The invisible balance sheet

Predicated on the belief that "invisible" assets, or IC, represent a considerable share of a know-how company's market value and that traditional balance sheets do not adequately account for it, Sveiby proposes an "invisible" balance sheet (figure 4.1).

Figure 4.1: The invisible balance sheet



Source: adapted from Sveiby, 1997: 11; 1998a: 2.

Sveiby proclaims that "under the surface" of the traditional "visible" balance sheet resides an "invisible" balance sheet itemising the three categories of IC as intangible assets. These intangible assets are deemed to have substantial implications for financing a knowledge organisation. In line with visible assets financed with visible capital, invisible assets are typically financed with invisible capital, viz. a company's IC (Sveiby, 1997, 1998a).

To summarise the rationale of Sveiby's Intangible Asset Monitor, two areas deserve attention. Firstly, the author discovered that know-how companies compete in the knowledge paradigm according to different rules than their counterparts in the industrial paradigm. The most important aspect differentiating competitive success seems to be the predominant importance of intangible assets that characterises know-how companies. Secondly, this relative importance of IC suggests the potential of an invisible balance sheet to measure the constituents of this important organisational resource. It should be emphasised again that the domain of "know-how companies" is seen as restricted to service industries. This would suggest that the Intangible Asset Monitor as a tool is primarily designed for service industries. This should be borne in mind when investigating the purpose of Sveiby's tool.

4.2.3 Purpose

The purpose of the Intangible Asset Monitor seems predicated on the assumption above, which suggests that concomitant with the rising importance of non-financial capital in know-how companies, the need emerges for new measurement systems based on non-financial measures emerges. Financial indicators, such as return on equity or return on assets, it is argued, do not shed sufficient light on intangible assets and are thus inappropriate for managing and measuring IC. Sveiby reasons that

> "it is tempting to try to design a *measurement-system* equivalent to double-entry bookkeeping with money as the common denominator. It is an established framework with definitions and standards and therefore common sense. But this is precisely the reason why we should break with it. If we measure the new with the tools of the old, we won't be able to perceive the new" (Sveiby, 1997: 155, emphasis added).

From the quotation above would follow that Sveiby, in order to perceive the "new," designed the Intangible Asset Monitor as a framework specifically for measuring intangible assets. It is should furthermore be re-emphasised that this system for measuring IC is designed to serve two ends, i.e. the Intangible Asset Monitor may serve as an internal measurement system, and as a format to publicly report corporate results.

In summary, the analysis of origin, rationale and purpose of Sveiby's Intangible Asset Monitor, revealed that this ICM tool is specifically designed for "know-how" companies, where IC seems to exceed financial capital stocks. As a result, greater explicit managerial recognition would need to be given to the measurement of these intellectual assets. Ideally, argues Sveiby, ICM tools as a means for such measurement would accommodate two generic objectives, viz. they could, firstly, be used as an internal measurement system, and secondly, for external reporting purposes. Sveiby's approach to the development of an ICM tool, based on these assumptions and objectives, is the focus of the subsequent section.

4.3 Approach and tool

Sveiby's approach in designing a measurement system for IC can be interpreted as entailing three generic steps. Developing a good grasp of these three steps is essential for an understanding of the logic and potential of Sveiby's approach to ICM. The first step involves

the identification of bases for measuring each of the three building blocks of IC as Sveiby sees them (chapter 2 describes Sveiby's approach to the anatomy of IC). The second step then delineates appropriate measures for each of the identified bases. In a third step, the identified bases, with the corollary measures, are grouped under the three building blocks of IC, viz. external structure, internal structure and competence of employees. Figure 4.2 illustrates the resulting tool, the Intangible Asset Monitor.

Figure: 4.2: The Intangible Asset Monitor

Competence	Internal Structure	External Structure
Indicators of Growth/Renewal	Indicators of Growth/Renewal	Indicators of Growth/Renewal
Indicators of Efficiency	Indicators of Efficiency	Indicators of Efficiency
Indicators of Stability	Indicators of Stability	Indicators of Stability

Source: Sveiby, 1997: 165.

The sequence of steps in Sveiby's approach suggests structuring the analysis in this section in the following way: firstly, the process of determining bases for measurement is discussed; secondly, the process of delineating appropriate measures for these bases is briefly analysed. With these insights, the Intellectual Asset Monitor as such is examined. This examination involves a discussion of the approach in dealing with each building block of IC, as well as a critical analysis of the Intangible Asset Monitor itself. To illustrate the theoretical analysis with practical insights, reference is made to Celemi, a Swedish company, which "develops and sells training tools" (Sveiby, 1997: 191).

4.3.1 Determining the bases of measurement

Determining bases for measurement can be seen as the first step in developing an Intangible Asset Monitor. Sveiby suggests the adoption of three bases, viz. efficiency, stability, as well as growth and renewal. The problem with Sveiby's treatment of these bases appears to be the author's imprecise treatment concerning their generation, structure, and systemisation. This impreciseness is rather unfortunate, since these bases seem to serve as fundamental building blocks of the Intangible Asset Monitor. The author's comments on these building blocks generally do not seem to be very illuminating. The only explanation provided suggests that

the three bases for measurement "are growth and renewal – in other words, change – efficiency, and stability" (Sveiby, 1997: 164). Despite the general dearth of information Sveiby emphasises that "effectiveness is seldom measured" (Sveiby, 1997: 155) and underlines the relative importance of efficiency-related indicators versus effectiveness-related indicators (see, Sveiby, 1997: 154). This seems noteworthy in view of the following chapter, where an expanded organisational performance measurement tool (the Balanced Scorecard) will be discussed. In the Balanced Scorecard, both efficiency and effectiveness are explicitly considered in designing measures.

4.3.2 Selecting measures

After the identification of the three bases for measuring intangible assets, Sveiby suggests the selection of concrete measures for these bases as a next step. The selection should be in line with the above-discussed primary purpose of measurement, i.e. whether a company aims at external presentation or establishment of an internal management and measurement system. Within this broad framework, however, the selection of these measures is not at all formalised in the Intangible Asset Monitor. While the author gives numerous suggestions, some of which will be reviewed in the discussion of the Intangible Asset Monitor, these are not prescriptive. In fact, Sveiby emphasises that each individual company should view the proposed measures only as a guideline. Within the broad framework of figure 4.2, a wide spectrum of measures may be identified. This has critical implications for the envisaged dual purpose of Sveiby's ICM tool, as is shown in the analysis towards the end of the chapter.

With the general approach discussed, the way in which the tool itself accommodates measures for each of the three building blocks of IC can be investigated. For illustrative purposes a list of indicators, as offered by Sveiby, is presented at the end of each building block. Towards the end of the chapter the integration of these measures, in the format of the Intangible Asset Monitor, is demonstrated using Celemi's Intangible Asset Monitor. The present section neither attempts to critically discuss each measure per se, nor the underlying formulae. It is rather intended to provide a brief sketch of Sveiby's approach to the delineation of these measures and the implications of this approach for a better understanding of ICM. The first building block to be analysed is the external structure.

4.3.3 External structure

Notwithstanding the fact that, according to Sveiby, the external structure includes per definitionem relationships with suppliers, brandnames, and trademarks, this author seems to restrict his analysis of the external structure to customers. It is emphasised, in various instances throughout the analyses, that customer relations are the most decisive factor in determining the external structure. This should be remembered when assessing the sophistication of Sveiby's model in dealing with the external structure as a building block of IC. Predicated on the belief that customers are the most important variable influencing corporate IC stocks, Sveiby proposes to classify customers according to their relative contributions to corporate intangible assets.

4.3.3.1 Classifying customers

The classification of customers according to their relative contributions to intangible value creation processes of "know-how companies," represents the first step in measuring the external structure. The logic behind the introduction of this categorisation scheme seems to be that not all customers are equally profitable. Potential sources of such profit are revenues contributed by customers in forms other than money, i.e. intangible revenues. Sveiby (1997: 118, 1998b) discerns three kinds of intangible revenues, viz. firstly, those that improve the learning competencies and ideas of the employees (e.g. through training programmes). Secondly, those that enhance the external structure (e.g. through referrals to new customers or establishments of prestige). Thirdly, those that enhance the internal structure (e.g. through leveraging R&D projects or projects that support knowledge transfer).

The above-mentioned approach to categorise customers seems intuitively appealing. This is particularly so, if one bears in mind that not all customers are equally profitable and useful to further develop the competence of the employees, enhance the corporate image, or generate new assignments. This impression can be substantiated by observing the practical operationalisation of this approach. For example, Celemi adopted Sveiby's customer classification scheme because of its potential to enhance the three types of intangible assets through intangible revenues. Just as visible revenues improve the tangible equity, Celemi ascribes the impact on invisible revenues to the improvement of efficiency and the value of intangible assets. By canvassing customers according to their respective provision of invisible revenues, rather than in terms of their monetary contributions, Celemi is able to actively

enhance its stock of IC. Celemi distinguishes between image-enhancing customers, organisation-enhancing customers, and competence-enhancing customers.

Image-enhancing customers improve Celemi's external structure by means of references and testimonials. In this way, they assist Celemi in finding new customers and simultaneously reduce its marketing costs. Organisation-enhancing customers improve Celemi's internal structure by demanding state-of-the art solutions which are new and thus contribute to Celemi's R&D. Competence-enhancing customers improve the level of Celemi's competencies by challenging its employees with new and demanding projects, enabling the employees to learn (Sveiby, 1997). The classification of customers according to their relative contributions forms the basis for the delineation of measures for the external structure.

4.3.3.2 Measuring the external intellectual capital structure

It should be kept in mind that, according to Sveiby, the most important aspect of corporate external structure resides in customer relations. Hence the exclusive focus of this author on customer relations for the purpose of measuring external structure. Table 4.2 has been drawn from the most salient measures and presents Sveiby's analysis in an abridged format. In line with Sveiby's general approach, these measures are grouped under the identified bases for measurement, viz. growth/renewal, efficiency, and stability.

Table 4.2: Measures for the external intellectual capital structure

GROWTH/RENEWAL	
Profitability per customer	A common phenomenon in organisations is that costs are not accrued to customers but to products or functions. Sveiby views profitability per customer as much more valuable criterion and suggests categorising costs and revenues according to customers in order to be able to calculate the control figure.
Organic growth	This measure calculated as income from core business activities with income from acquisitions deducted shows how a business concept is perceived in the market.
EFFICENCY	
The satisfied customers index	Sveiby argues that the best early indication of whether results are about to improve or deteriorate is customer satisfaction typically attained by means of polls. Interestingly and contradictory to the earlier mentioned notion that effectiveness related measures are too difficult to gather, Sveiby emphasises the valuable insights to be gained from attitude polls.
Win/loss index	An index can be calculated by comparing the number of successful bids with the number of unsuccessful bids which compared over time reveals how customer perceive the firm.
Sales per customer	As efforts to expand the sales per customer are regarded as profitable the efficiency of a company's existing network of customers should be measured.
STABILITY	
Proportion of big customers	It is contended that if a company depends on a few large customers its position and structure is weak. Therefore Sveiby suggests to measure the percentage of billings attributable to the five biggest customers or the number of customers accounting for fifty percent of billings.
Age structure	In this case, age structure is interpreted as customer longevity. This measure is considered useful since the longer customers have been with a firm the better are its relations with them and the easier it is to retain them.
Devoted customer ratio	It indicates what proportion of sales comes from companies that have been customers for longer than five years.
Frequency of repeat order	A high frequency rate indicates that customers are satisfied. As a rule, according to Sveiby, old customer are more profitable than new ones and thus this indicator also tells something about the profitability potential.

Source: Sveiby, 1997: 182-184.

At the risk of repetition it should again be emphasised that Sveiby's main concern in the external structure seems to be corporate customers. His approach to measure this building block of IC, seems intuitively appealing and rather sophisticated. It should be appreciated, however, that Sveiby's explicit focus on customers could lead to a negligence of other important areas of organisational influence, which could radically impact IC. As evident from chapter 2, the areas of corporate competitors, as well as the wider social and political environment would particularly deserve attention. This aspect will receive further attention towards the end of this chapter. After investigating Sveiby's approach in addressing the external structure, the two remaining building blocks of IC, viz. internal structure, and employee competence can be analysed.

4.3.4 Internal structure and employee competence

In analysing the two remaining building blocks of IC, internal structure, and employee competence, it should be realised that these are inherently linked in Sveiby's approach. It is

important to appreciate the approach of this author in delineating the internal structure and employee competence building blocks. This approach involves the classification of employees in two generic categories, of which one is interpreted as internal structure, and the other one as employee competence. The analysis in this section is structured in three steps. Firstly, this two-fold classification scheme for employees in the Intangible Asset Monitor is illuminated. Secondly, the measures for each of the two identified categories are outlined.

4.3.4.1 Classifying employees

According to Sveiby, there are two major types of employees within an organisation's personnel who should be classified for the purpose of measuring IC. Sveiby's classification approach involves distinguishing between a company's "support staff" and "professionals." With regard to the former, Sveiby explains that a company's support staff does not directly generate revenues. Members of the support staff rather contribute indirectly by assisting the primary revenue generators, viz. the professionals. Employees in this category would be predominantly concerned with general management, administration, accounting, personnel, or reception tasks. Also included should be employees carrying out activities like routine maintenance of computer systems and databases, unless their work refers to a specific customer or group of customers. The tasks of the former would focus on administrative issues and are believed to add to the internal structure of an organisation. Hence, it is proposed to measure the support staff under the "internal" category of IC (Sveiby, 1997).

Professionals, in turn, are considered the primary revenue generators of the knowledge organisation. This employee category, in Sveiby's analysis, is directly involved in generating revenues for the company. For example, such employees would be engaged in planning, processing or presenting solutions to customer problems, and would be directly involved in client work. As a result, the measures for the external structure are constructed around the time professionals spend maintaining, building and developing client relations. Sveiby further suggests that the category "competence of people" (also "competence of employees" or "professional competence") exclusively refers to the competence of professionals. Measures should, for instance, target at degree of responsibility or area of expertise.

To summarise, Sveiby's approach to the measurement of internal structure and employee competence as two building blocks of IC, seems primarily concerned with the classification of

employees in two generic categories, viz. "professionals," and "support staff." The former is interpreted as the IC building block, competence of employees, whereas the latter represents the internal structure. Companies wishing to introduce the Intangible Asset Monitor in their firms are advised to first categorise employees accordingly. In a subsequent step, Sveiby suggests that appropriate measures for each of the resulting building blocks need to be identified.

4.3.4.2 Measuring the internal intellectual capital structure

To recall from the above, measuring the internal structure refers exclusively to measuring the activities of the support staff. Table 4.3 attempts to summarise the most pertinent measures, which Sveiby propounds in the course of his analysis.

Table 4.3: Measures for the internal intellectual capital structure

GROWTH/RENEWAL	
Investment in the internal structure	Such investments in for instance new subsidiaries or new methods should be monitored and reviewed on a yearly basis and can be expressed as a proportion of sales or value added.
Investment in information processing systems	IT investments expressed as percentages of sales or in absolute figures are deemed to provide valuable insights into the development of the internal structure. Measures such as number of computer per employees can also be used as control figures. Sveiby argues that in many industries these investments indicate the progress towards accomplishing the corporate mission.
Customers contributing to internal structure	Innovative projects involving e.g. new materials, new methods of calculation, or new software can be seen as important variable potentially contributing to the growth of the internal structure.
EFFICENCY	
Proportion of support staff	A change in the proportion of support staff to total number of employees is an indicator for the improvement/deterioration of the internal structure.
Sales per support person	This measure expresses how large a sales volume the organisation's internal structure can handle.
Values and attitude measures	Sveiby emphasises that although value judgements generally belong to the competence category, one type of value and attitude measures naturally fits into the internal structure, i.e. indicators for the attitude of employees toward corporate culture. It is suggested to conduct internal attitude polls, which should be summarised in a few indicators and followed up yearly.
STABILITY	
Age of organisation	As older organisations are generally regarded as more stable than younger ones, signs such as "Established in 1887" indicate trustworthiness.
Support staff turnover	As the objective of the support staff is to maintain the internal structures, a lower turnover rate than that for professionals should be striven at.
The rookie ratio	The number of people being less than two years employed determine this indicator. This group is typically considered to be less efficient than others and a high rookie ratio thus hints at an unstable internal situation. Sveiby advises to view the rookie ratio and the seniority ratio as complements rather than singularly.

Source: Sveiby, 1997: 175-177.

4.3.4.3 *Measuring professional competence*

Measuring professional competence, which can be interpreted as Sveiby's terminology for human capital (see chapter 2, table 2.1) is considered paramount, because professionals are believed to be a primary source of value creation in service companies. Table 4.4 summarises the most important aspects of Sveiby's suggestions for measuring professional competence. It should be remembered that human capital in Sveiby's sense, refers exclusively to the competence of professionals (Sveiby, 1997).

Table 4.4: Measures for professional competence

GROWTH/RENEWAL	
Number of years in the profession	The total number of years in the profession is a measure of the skill and experience of a company's professional body, whereas professional experience per employee is a measure of the average skill and experience per employee.
Level of education	The educational level of professionals affects the assessment of their competence and hence a knowledge company's ability to future success.
Training and education costs	As knowledge companies typically invest heavily in competence development, training costs should be accounted for in monetary as well as time aspects.
Grading	Sveiby contends that educational level describes competence imprecisely and suggests awarding grades to their employees. To this end, a five-point or three-point scale may be used in order to be able to trace how competence develops in various fields, and how it changes over time.
Turnover	The quotient of competence of professionals who have joined the company divided by the competence of those who have left it shows how personnel turnover affects the company's competence.
Competence-enhancing customers	Valuable information can be gained by measuring the proportion of customer assignments that contribute to competence development of professionals.
EFFICENCY	
Proportion of professionals in the company	The number of professionals divided by the total number of employees is considered useful in benchmarking the company against competitors.
The leverage effect	The underlying question of this measure is how important a company's in-house professionals are to its ability to generate revenue.
Value added per professional	Value added per professional can be regarded as purest measure of the professionals' capability to generate economic value. As it has been mentioned above, Sveiby emphasises that value added can generally be seen the best measure for yield. Factors influencing this measure, it is argued, are the state of the market, the efficiency of a company's management, and the amount of value added paid out directly to employees as salaries and benefits.
STABILITY	
Seniority	Sveiby views the number of years professionals are employed in the same company as indicator for stability.
Professional turnover rate	This rate is calculated as the numbers of employees leaving a company divided by the number of new employees. A low turnover suggests a stable but static corporate situation, while high turnover rates hint at dissatisfied employees.
Average age	Against the fact that older employees tend to be more stable than younger as they are unlikely to leave the company, average age is believed to be a good indicator for stability. Like turnover and seniority, it is also a measure of dynamics because a high average age can be interpreted as a sign for stability on the one hand, and as indicator for inflexibility on the other hand.
Relative pay position	This measure is usually expressed in index form and has high information value because it measures cost levels relative to competitors.

Source: Sveiby, 1997: 168-174. void

To summarise, the starting point for Sveiby's approach to the measurement of the two building blocks of IC, internal structure (i.e. internal capital) and employee competence (i.e. human capital), is the corporate workforce. This is in line with an established consensus in the field, would be the corporate workforce (see, e.g. Drucker, 1999a, 1999b; Roos and Roos, 1997; von Krogh and Roos, 1995). The individual employees are classified according to their respective input to revenue generation of the firm. Those that are directly involved in generating revenues, are referred to as "professionals." Employees who indirectly generate revenues, are called support staff." An important point to consider seems to be that Sveiby, in measuring employee competence, exclusively considers "professionals." In measuring internal structure, the author focuses on employees who fall under the "support staff" category. Thus, it should be appreciated that in the analysis of this author, the measurement of the two generic building blocks that have been identified in chapter 2 (viz. "internal capital" and "human capital") essentially revolves around the measurement of employees. A practical example will serve to illustrate Sveiby's approach to ICM.

4.3.5 Celemi's Intangible Asset Monitor

In order to demonstrate the way in which Sveiby's theory is translated into practice, a practical example is now given. The present section illustrates the Intangible Asset Monitor of Celemi (figure 4.3).

Figure 4.3: Celemi's Intangible Asset Monitor 1994-1995

Our Customers (External Structure)	Our Organisation (Internal Structure)	Our People (Competence)
Growth/Renewal	**Growth/Renewal**	**Growth/Renewal**
Revenue growth 44%	IT investments percent value added (15) 11%	Avg. professional experience (7), years 7.8 -25%
Image-enhancing customers (2) 40%	Organisation-enhancing customers (2) 44%	Competence-enhancing customers (2) 43%
	Product R&D percent value added 18%	Total competence, experts (4, 7), years 298 43%
	Total investment in org. percent value added 3%	Average education level (3) 2,3 0%
Efficiency	**Efficiency**	**Efficiency**
Changes in sales per customer (12) 4%	Change proportion of admin. staff (1,8) 4%	Value added per expert (4, 15), TSEK 867 13%
	Sales per admin. staff growth (6, 11) -20%	Value added per employee (6, 15), TSEK 665 -13
Stability	**Stability**	**Stability**
Repeat orders (9) 66%	Admin. staff turnover (1, 14) 0%	Expert turnover (4, 14) 10%
Five largest customers percent (5) 41%	Admin. staff seniority years (1, 13) 3	Expert seniority (4, 13) years 2,3 79%
	Rookie ratio (10) 64%	Median age all employees years, 34.0 -12%

Notes:
1. Administrative staff: All employees other than experts
2. Customers: Categorised under three headings. The indicator is percent share of revenues.
3. Education level: Employees at year-end with primary education (calculated as 1), secondary education (2), and tertiary (3).
4. Experts: Employees working directly with customers in projects. Top managers are regarded as experts because they work actively with customers.
5. Five largest customers: Share of revenues from five largest customers.
6. Number of staff: Two definitions are used-average number employed during year for efficiency indictors; year-end numbers for growth/renewal and stability indicators.
7. Professional competence: Number of years in current profession.
8. Proportion of administrative staff: Number of administrative staff divided by number of total staff at year-end.
9. Repeat orders: Customers also existing in 1994 (those corresponding to two-thirds of revenues).
10. Rookie ratio: Number of employees with less than two years seniority.
11. Sales per administrative staff: Total revenues divided by average number of administrative staff.
12. Sales per customer: Total revenues divided by average number of customers.
13. Seniority: Number of years as Celemi employee.
14. Staff turnover: Number of leavers divided by number of staff at beginning of year.
15. Value added: The value produced by Celemi's employees after payment to all outside vendors.

Source: Sveiby, 1997: 195.

The percentages in figure 4.3 are meant to indicate the changes in absolute value of the respective indicators from 1994 to 1995. The implications of Celemi's Intangible Asset Monitor would point to the following: the external structure appears to be stable and has a large potential to generate intangible revenues in future. It can thus be interpreted as the most

valuable category of Celemi's IC. Concerning the internal structure, Celemi's organisation does not seem stable, yet has considerable potential for efficiency improvement and volume growth. Regarding the competence of its employees it would seem that new employees are in average well educated. Hence, it might be speculated that the rapid growth in competence could profoundly change and revitalise the company (Sveiby, 1997, 1998e).

For the purpose of this study, a brief pause should be made here to appreciate an important aspect. Sveiby's approach, as illustrated by the Celemi example, appears to account for changes in the absolute value of individual IC indicators. (In the example above, from one year to the next.) Sveiby's Intangible Asset Monitor, however, does not seem well versed when elucidating where these changes come from, given that the "IC balance sheet total" remains unchanged. Yet, it would be interesting to understand the origin of such changes. For example, it would be interesting to see how human capital is translated into internal capital, because that would enable corporate leaders to monitor "what is left when the employee goes home." Such changes of individual IC categories, given that the total sum of IC remains unchanged, have been referred to as "flows" of IC (see, e.g. Roos and Roos, 1997; Roos, Roos, Edvinsson, and Dragonetti, 1998; and in particular Bontis, 1999). Although Sveiby emphasises the importance of measuring flows and trends (Sveiby, 1997: 156, 164), it seems as if his understanding of flows is limited to changes in absolute values, i.e. the development of certain indicators from one year to the next is measured as in the Celemi example. This aspect will be further elaborated in chapter 6.

With the approach and tool illustrated, the analysis can now proceed with a critique of the most salient aspects of Sveiby's Intangible Asset Monitor.

4.4 A critique of the Intangible Asset Monitor

Before criticising the Intangible Asset Monitor, it should be acknowledged that Sveiby's approach and tool should be credited as a pioneering research effort in developing a preliminary view on ICM. Sveiby's Intangible Asset Monitor can be criticised on various accounts. In view of the objective of the study, the most pressing areas for critical analyses would include, but may not be restricted to, firstly, the explicit focus of Sveiby on service industries; secondly, the approach utilised to categorise employees; thirdly, the feasibility of the dual purpose of Sveiby's tool would need to be examined; and finally, and perhaps most

importantly, an evaluation of whether the Intangible Asset Monitor can primarily be regarded as a measurement or a management tool.

4.4.1 The explicit focus on service companies

In the section describing the origins, rationale and purpose of Sveiby's ICM tool, attention has been drawn to the fact that the Intangible Asset Monitor has its roots in Sveiby's publishing company, Affärsvälden, a company operating in the service industry. This would suggest that the ICM tool, as presented by Sveiby, could be understood as designed specifically for companies in the service sector. In fact, closer scrutiny of Sveiby's approach has revealed that the "know-how companies" this author uses to illustrate the pertinence of the Intangible Asset Monitor, can be seen as service companies. This can be substantiated by reference to an earlier book by Sveiby (Sveiby and Risling, 1986), where it is emphasised that all know-how companies are essentially service companies.

The explicit focus on service companies in general and know-how companies in particular, could compromise the potential of the Intangible Asset Monitor for companies in other industries (e.g. manufacturing industries). While it is not the purpose here to contradict Sveiby in his contention that IC assumes greatest relevance to companies in service or knowledge intensive industries, it must be emphasised that the explicit focus that is given to these branches of industry could impact the usefulness of the Intangible Asset Monitor to other settings. For example, to the extent that different industries are characterised by dramatically different competitive pressures (see, e.g. Fahey and Randall, 1994), ICM tools emanating from a given industry could be of reduced relevance to other industries. Thus, it should be criticiesed that Sveiby, through not using a broader empirical research base covering other industries besides the knowledge and service variety, would a priory restrict the validity of his tool to knowledge and service industries. This seems to be an important observation in view of the author's approach to classify employees.

4.4.2 A critique of Sveiby's approach to the classification of employees

As the analysis in the present chapter has obviated, a fundamental step in Sveiby's approach to the delineation of measures for the two IC building blocks, internal structure (i.e. internal capital), and employee competence (i.e. human capital) seems to be the classification of

employees. Thus, the classification of employees appears to assume a pivotal role in delineating internal capital and human capital in the Intangible Asset Monitor. Because of its importance and fundamental nature, the methodology of this step would need to be scrutinised. Sveiby's categorisation approach, while certainly useful and in line with an established consensus in the related literature, where it is proclaimed that a starting point of investigations into corporate IC would always be the individual (see, e.g. Drucker, 1999a, 1999b; von Krogh and Roos, 1995; von Krogh and Vicari, 1993; Zimmerli, personal communication, March 10, 1999), can be criticised on various accounts. Two of the more important aspects pertaining to the limitations possibly associated with this approach shall be illuminated in the present section.

Firstly, it could be argued that Sveiby's view on the constituents of internal structure (i.e. internal capital) could be overemphasising employees, at the expense of other important components of internal capital. To recall chapter 2, internal capital would not (only) embrace employees. In fact, it has been found that internal capital would embrace the structures and systems that "are left when the employees go home."

Secondly, one might argue that a neat categorisation of employees, as proposed by Sveiby is hardly possible. In an era characterised by lean organisational structures, and multiple roles for employees (Lissack and Roos, 1999; Buys, 1999) it is unlikely that tasks to be performed by support staff and professionals can neatly be assigned to the respective category. For example, a professional may schedule her agenda herself because no support staff member is assigned responsible for this activity. Such cases do not seem to represent exemptions in today's business world, and could thus blur the neat boundaries drawn in Sveiby's classification approach. Sveiby himself acknowledges this fallacy and refers to it as the "problem of the grey areas-where employees perform a variety of duties" (Sveiby, 1997: 166). According to him, this problem

> "can be solved by including only the part of their time that is spent working for clients as professionals, with the rest charged to the internal structure. Time is such an important variable in knowledge organisations that it must be recorded" (Sveiby, 1997: 166).

This would suggest that Sveiby's approach to employee classification allows for enough flexibility in categorising employees in service and know-how companies, because the two

categories of employees can be used as general guidelines rather than as prescriptions. Celemi, for instance, categorises employees in "administrative staff" and "experts." Employees working directly with customers in projects are considered to be experts, while administrative staff comprises all employees other than experts (Sveiby, 1997). It should be emphasised however that the described approach, while certainly useful in service companies and know-how companies, where all employees can be seen as contributing to corporate IC development, may be less relevant to other corporate environments. For example, in manufacturing industries, a great number of the workforce on the shop floor often performs standardised tasks, perhaps with little or no contribution to corporate IC development. Under these circumstances, Sveiby's categorisation approach would not be adequate, because it a priori assumes that all employees of a company contribute to corporate IC development.

For the purpose of this study, it might be enlightening to briefly consider an alternative approach that might be more applicable to corporate environments other besides the service industry. A particularly useful approach is presented by Stewart. This author proposes a two by two matrix with the dimensions "difficult/easy to replace" and "low/high value added" to categorise a company's workforce. Figure 4.4 illustrates that Stewart's approach differs from Sveiby's in significant ways. Stewart firstly identifies employees, which form part of the human capital (upper right grey shaded quadrant). These employees are typically difficult to replace and an important source of value creation in the company. Hence, their contribution to IC. According to Stewart, a company's human capital is embodied in the people whose talent and experience create the products and services being the reason customers come to it and not to a competitor (Stewart, 1998).

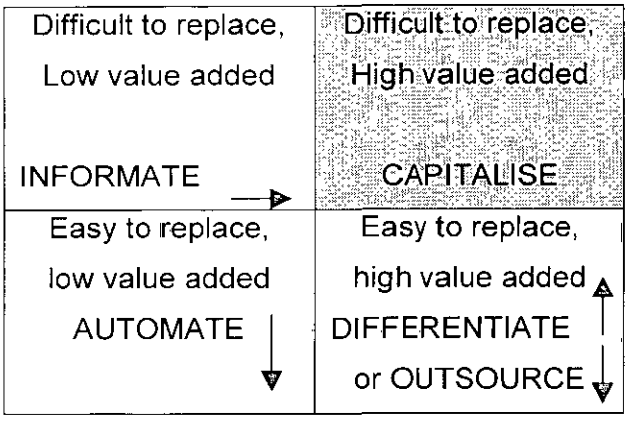
Figure 4.4: Stewart's approach to categorise a company's workforce

Difficult to replace, Low value added	Difficult to replace, High value added
Easy to replace, low value added	Easy to replace, high value added

Source: adapted from Stewart, 1998: 90.

In a second step (figure 4.5) managerial directives are given as how to address the four established categories. It should be noted here that the only category Stewart suggests to capitalise on is human capital (grey shaded).

Figure 4.5: Managerial directives for addressing the established categories



Source: adapted from Stewart, 1998: 91.

In essence, Stewart's approach appears to be more applicable to many corporate environments than Sveiby's, because it would discriminate better between the individual contributions of employees to corporate IC. Naturally not all employees in all industrial settings could be considered as human capital. This appears to be a valid speculation, and would be particularly pertinent to physical asset intensive industries, where a high percentage of low skilled workers might be easy to replace, without negatively impacting a company's IC situation.

4.4.3 The feasibility of the dual purpose in Sveiby's tool

As the analysis in this chapter has emphasised on various occasions, Sveiby is not prescriptive with regard to the indicators that are to be delineated for the purpose of measuring the three building blocks of IC. Attention has been drawn to the fact that, within the broad framework of figure 4.2, a wide spectrum of measures can be identified. This approach to the delineation of measures is likely to have critical implications for the dual purpose of Sveiby's ICM tool, viz. to serve as a tool for internal measurement, as well as for external reporting. With regard to the utilisation of the Intangible Asset Monitor for internal measurement purposes, allowance for a wide spectrum of possible indicators should be welcomed to the extent that it

allows individual companies to tailor the Intangible Asset Monitor to their individual and company and/or industry-specific needs.

Therein, however, seems to reside the rub. The envisaged dual purpose behind the Intangible Asset Monitor would suggest the fallacies of a non-standardised approach to selecting such measures. The wide spectrum of possible measures to be identified could ultimately lead to the generation of company-specific ICM measurement systems. While this might be an asset for internal management purposes, it would clearly represent a liability for external reporting purposes, where comparability would be paramount. If Sveiby's tool was to be used for external purposes, it would be vital to ensure that individual companies calculate their respective IC in a standardised manner, in order to ensure comparability. Indeed, such comparability would form the very rationale behind the generation of ICM systems for external reporting. A "laissez faire" approach, as presented by Sveiby would radically compromise the potential of ICM systems for external purposes, e.g. reporting, and benchmarking. Traditional, financially oriented performance measures already seem to be plagued by the heterogeneity of accounting standards across countries, thus negatively impacting comparability. In order to ensure that, in the IC realm, "apples are not confused with pears," a more standardised approach would be more promising. This must be remembered when analysing the question of whether the Intellectual Asset Monitor can be primarily seen as a measurement system, or as a management system.

4.4.4 Measuring versus managing intellectual capital

Throughout the analysis in this chapter, is has been referred to the Intangible Asset Monitor primarily as an IC measurement tool, that can allegedly be used for internal as well as external purposes. This seems to be in line with the title of Sveiby's tool, where "monitoring" can be interpreted as inherently concerned with "measuring." This contention can be substantiated with the following remark by the author himself.

> "The *measuring* system that I propose does not present a full and comprehensive picture of a company's intangible assets; such a system is not possible. That is why the all comprehensive approaches have failed so far. Rather, the purpose here is to be practical, to 'open a few windows' so that managers can at least begin *measuring* their firms" (Sveiby, 1997: 150, emphases added).

The citation above seems to suggest that Sveiby himself perceives the Intangible Asset Monitor as a tool that is designed specifically for measuring, rather than managing IC. This would be an important observation, in view of the fact that the Intangible Asset Monitor is commonly regarded as an IC management, rather than an IC measurement tool. It should be realised, however, that such terminological and conceptual incongruencies seem to be frequent accompaniments of emerging research areas (Despres and Chauvel, 1999) where substantial effort typically needs to be devoted to the definition of clear terminological boundaries, and the development of a conceptual apparatus (von Krogh and Roos, 1996b). Another manifestation of such conceptual obscurity would be a recent article with the title "The knowledge toolbox: a review of the tools available to *measure* and *manage* intangible resources" (Bontis, Dragonetti, Jacobsen, and Roos, 1999). One of the authors of this paper, when asked why the two terms were used interchangeably, explained that "we do not use them really interchangeably, but the only point in measuring is to ease and facilitate management" (Dragonetti, personal communication July 22, 1999). It should nevertheless be kept in mind that Sveiby's Intangible Asset Monitor can be seen as an ICM tool that would be preoccupied with measuring IC, and that concrete recommendations concerning the actual management of this important corporate resource are generally absent. This must be appreciated in order not to overestimate the potential of this tool.

4.5 Summary

In the present chapter, Sveiby's Intangible Asset Monitor, a pioneering conceptual model that has been designed specifically to measure IC for the purpose of internal and external reporting was discussed and critically analysed. Analysis revealed that the origin, rationale and purpose of this tool are inherently linked to a company in the service industry (the publishing company "Affärsvälden"). This nexus seems to have imparted a fairly strong emphasis on service industry oriented foci inherent in Sveiby's approach and tool.

In summarising the main insights that could be gained throughout the analysis it should be emphasised that Sveiby should be credited for his pioneering efforts in creating a view and terminology on intangible assets that makes a meaningful discussion about their measurement and management possible. Despite this appreciation, three important aspects need to be criticised in order to develop and sustain an enhanced understanding of the concept of ICM, of which Sveiby's approach and tool forms an integral part.

- Firstly, it ought to be realised that Sveiby's ICM system is designed specifically for service companies in general and know-how companies in particular in mind. In view of the emphasis placed on the service sector, the applicability of Sveiby's tool to companies in other, e.g. manufacturing industries, should not be accepted at face value.

- Secondly, and perhaps even more importantly, the Intangible Asset Monitor, while often devoted the ICM tag, would be a tool that seems inherently concerned with measuring, rather than managing intangible assets. This should be remembered, in order not to overestimate the potential of Sveiby's ICM system. The above-mentioned two main points would mean that probably because of the pioneering nature of the Intangible Asset Monitor, its potential as an IC management tool for a wider spectrum of industries would clearly be limited.

- Thirdly, it should not be overlooked that the starting point for Sveiby's approach in delineating measures for the IC building blocks internal structure (i.e. internal capital), and employee competence (i.e. human capital) would in both cases be the corporate workforce. The (in)appropriateness of this approach becomes obvious if one recalls the analyses from chapter 2. To the extent that both internal capital and human capital would be inherently preoccupied with employees, important structures and systems that would form part of internal capital (i.e., what is left when the employees go home) could eschew managerial attention. In a similar vein, Sveiby's exclusive focus on customers in the external structure (i.e. external capital) could lead to a neglect of other important constituents of external capital, such as competitors, relationships with the wider social and political environment, etc.

Chapter 5: The Balanced Scorecard

5.1 Introduction

The present chapter attempts to critically discuss Kaplan and Norton's Balanced Scorecard, which has originally been designed as a holistic corporate performance measurement system and can for the purpose of the present study usefully be interpreted as an ICM approach and tool. The Balanced Scorecard has specifically been selected because, in contrast to Sveiby's Intangible Asset Monitor, it emanates from the North America business management research realm and would complement the European perspective that traditionally characterises the magnitude of ICM research.

In line with many scholars and practitioners in the management realm (see, e.g. Drucker, 1995; Graham, 1998; Johanson, 1996; Skyrme and Amidon, 1998), Kaplan and Norton proclaim that traditional, i.e. financially oriented, performance measurement systems may have been appropriate for the industrial era. In the new corporate operating environment, which the authors label "information age," however, a singular focus on financial measures is seen as inadequate in view of their tendency to lead to suboptimisation. The reason for this seems to be that the complexity of the information age would be ill-reflected in purely financial indicators and that managing an organisation today thus requires an expanded view on performance measurement (see, e.g. Lissack and Roos, 1999). Within this line of thought, Kaplan and Norton take the stance that in order to guard the organisation against possible inadequacies of traditional performance measurement systems, an appropriate alternative ought to embrace financial as well as non-financial aspects in an integrated framework (Kaplan and Norton, 1992, 1996a).

In view of the objective of the study, to contribute to an enhanced understanding of ICM, it is contended that valuable insights for ICM theory can be gained from an in-depth analysis of the Balanced Scorecard. In order to further illuminate the concept of ICM, the analysis in the present chapter is conducted in three steps: firstly, the origin, rationale and purpose of the Balanced Scorecard are illustrated; secondly, a critical discussion of its operationalisation approach and concomitant tool; is provided; thirdly a critique of the most salient aspects of the Balanced Scorecard is made.

5.2 *Origin, rationale and purpose of the Balanced Scorecard*

As with Sveiby's Intangible Asset Monitor, the origin, rationale, and purpose of the Balanced Scorecard seem to form an integral building block of an enhanced understanding of the concept itself, and should be examined in some depth. In this section, the origins of the Balanced Scorecard shall be outlined. With this understanding, the rationale, which motivated Kaplan and Norton's approach is analysed. Based on these insights, the purpose behind this tool will be discussed.

5.2.1 Origin

The origins of the Balanced Scorecard can be traced back to research in the United States on intangible asset measurement in the late 1980s. A study under the leadership of David Norton, then CEO of Nolan Norton with Robert Kaplan as academic consultant has been undertaken by the research arm of the KPMG, the Nolan Norton Institute. It is noteworthy that this study, in contrast to Sveiby's singular focus on know-how and service companies, involved a wide spectrum of industries, e.g. service industries, consumer, and physical asset intensive industries. The study was triggered by the participants' belief that a sole reliance on financial performance measures may convey an inadequate and misleading picture of corporate success. Moreover, it was argued that a purely financial focus might lead to suboptimisaiton in many areas. These findings apparently led to the realisation that traditional performance measurement methods, involving only financial perspectives were becoming obsolete (Kaplan and Norton, 1996).

In the course of the project, case studies of innovative performance measurement approaches have been discussed, among others, the "Analog Devices" case. This case has illustrated Analog's use of a so-called "Corporate Scorecard" incorporating customer delivery times, quality and cycle times of manufacturing processes and effectiveness of new product developments in addition to traditional financial measures. During the group discussions the proposition emerged to expand Analog Device's scorecard and to categorise its measures using four building blocks, viz. the "financial," "customer," "internal," and "innovation and learning perspective." The resulting expanded scorecard was labeled "Balanced Scorecard" in view of its quest to provide, inter alia, a balance between financial and non-financial measures (Kaplan and Norton, 1996: viii).

Analog Device's expanded, or "balanced" scorecard has subsequently been adopted by participating companies in a variety of industries. These companies have established experimental sites in which prototype Balanced Scorecards were built and reported back the perceived strengths, weaknesses, acceptance, and barriers to the study group. In December 1990, at the conclusion of the study involving a multitude of businesses from diverse industries, the feasibility and benefits resulting from implementing such a balanced measurement system have been documented. Kaplan and Norton eventually summarised the findings of this study in their groundbreaking article "The Balanced Scorecard – Measures that Drive Performance" (Kaplan and Norton, 1992).

5.2.2 Rationale

Three critical building blocks seem to form the rationale underlying the Balanced Scorecard, viz., firstly, an expanded logic of corporate performance measurement; secondly, strategic positioning of the company using a Porterian approach; and thirdly, the implications from a shift from competing in the industrial age to competing in the information age.

5.2.2.1 An expanded logic

As was emphasised before, the first building block of the rationale, which seems to have motivated the Balanced Scorecard involves an expanded logic on corporate performance measures. The assumption that in an increasingly complex information era existing financial performance measurement approaches and tools can be suboptimal, seems to have inspired Kaplan and Norton to conduct a study in which financial indicators are complemented by non-financial indicators. In analysing the Balanced Scorecard, it must thus be appreciated that its underlying rationale does not originally stem from IC theory and practice.

5.2.2.2 Strategic positioning

The second building block of Kaplan and Norton's rationale seems to be the strategic positioning of the company using Porterian approaches. In line with Porter's (1980, 1985, 1998) theory of competitive advantage, the authors' main conceptual lens in approaching strategy appears to be determined by an outward focus on the competitive environment of organisations. According to the two scholars, a fundamental first step in pursuing corporate strategy would be to position the company in adequate market and customer segments

(Kaplan and Norton, 1996). It should be appreciated that at various instances in their analysis, Kaplan and Norton explicitly emphasise that the suggested approach draws on Porterian theories of the 1980s, probably because the authors "have seen this approach work well with dozens of organisations" (Kaplan and Norton, 1996: 37).

Consistent with Porter's suggestions, Kaplan and Norton consider it to be paramount that as a first step appropriate market and customer segments the business unit intends to serve are chosen. In a second step, internal business processes, which companies must excel at in order to provide value to its customers in the targeted markets would need to be identified. The identification is systematised using a template that involves internal, customer, and financial perspectives (Kaplan and Norton, 1996).

5.2.2.3 Competing in the information age

The third building block is fundamental to the Balanced Scorecard and seems to form the platform on which Kaplan and Norton build their argumentation. The authors emphasise that "companies are in the midst of a revolutionary transformation. Industrial age competition is shifting to information age competition" (Kaplan and Norton, 1996a: 2). According to Kaplan and Norton, the emergence of the information era renders many of the assumptions and beliefs inherent to industrial age thinking obsolete. Corporate competitive dominance, it is held, can no longer be sustained by the deployment of new technology into physical assets and by the management of financial assets and liabilities. The driving forces behind competitive success in the information age seem far more complex and would require new capabilities. Kaplan and Norton provide a comprehensive analysis of the principles and driving forces characterising the information age as opposed to those prevalent in the industrial age. In order to offer an abridged version of this analysis, and ultimately to shed more light on the rationale underlying Kaplan and Norton's approach, table 5.1 has been drawn.

Table 5.1: The principles of the information age as opposed to those of the industrial age

Item	Industrial age	Information age
Major enabler	Sophisticated financial control systems	Information technology
Employees	White and blue collar workers	Knowledge workers
Product life cycles	Relatively long	Continue to shrink
Determinants of long term success	Economies of scale and scope	Continuous improvement in processes and product capabilities
Geographical scope of operations	Restricted by domestic borders	Global involvement
Production	Standardised mass-production	Flexible, responsive, and high-quality production
Product offering	Low cost and standardised products and services	Customised products and services
Organisational functional departments	Separated	Cross functional
Relationship with customers and suppliers	Characterised by arm's-length transactions	Integrated transactions across value chain
Organisational structure	Hierarchy	Lean structure
Target customers	Mass-market	Various segments

Source: Kaplan and Norton, 1996: 2-18.

Scrutiny of Kaplan and Norton's analysis as summarised in table 5.1 suggests that at the heart of the rationale behind the Balanced Scorecard resides the notion that information technology is the most important driving force of the information age. The authors argue that information technology enables companies through its enormous potential to compete successfully in the complex, integrated, and global operating environment of the information age (Kaplan and Norton, 1996).

Further scrutiny of table 5.1 seems to reveal a second point: an apparent contradiction between the principles of the information age and Porter's theories. This observation would briefly need to be commented on. The apparent contradiction can be illustrated by means of an example. Analysis of the determinants of long-term success (i.e. a rigorous exploitation of economies of scale for the industrial age and a continuous improvement in process and product capabilities for the information age) would suggest that these essentially reflect main courses of action characteristic of Porter's cost leadership and differentiation strategy. Exclusive focus on information age principles would a priori reject Porter's cost leadership

theory because Porter is commonly referred to as epitome for "the economist-driven 'industrial organisation' line of thinking" (see, e.g. Roos and Roos, 1997: 414). Thus, it is interesting to note that rejecting part of Porter's theory seems a contradiction to the Balanced Scorecard's rationale, which would allegedly be "consistent with the industry and competitive analysis articulated in several of Porter's widely followed corporate strategy books" (Kaplan and Norton, 1996: 37).

In summary, the rationale, which seems to have motivated the construction of the Balanced Scorecard can be seen as demarcated by three major building blocks, viz. firstly, an expanded logic of corporate competitive success, involving both, financial, as well as non-financial perspectives; secondly, the strategic product market positioning using a Porterian approach; and, finally, the principles and driving forces that seem to impact competition in the information age, of which the predominant impetus seems to come from information technology. With the rationale in mind, the purpose of the Balanced Scorecard can be illustrated.

5.2.3 Purpose

In view of the rationale, which motivated the Balanced Scorecard, the authors suggest a twofold purpose, viz. firstly measuring business strategy, and secondly, managing business strategy. With regard to the former, Kaplan and Norton, emphasise that the Balanced Scorecard is designed to translate an organisation's vision and strategy into a coherent set of performance measures comprising both, financial and non-financial measures. In essence, the first objective of the Balanced Scorecard seems to be the provision of an expanded organisational performance measurement system for, and this is important, internal usage.

With regard to the latter, and this is equally important for the purpose of this study, the authors transcend their earlier interpretation (Kaplan and Norton, 1992) of the tool as a measurement system and now provide a "strategic framework for action" (Kaplan and Norton, 1996a: 11). The strategic framework would go beyond the perception of the Balanced Scorecard as an expanded organisational performance measurement system in that it suggests its value as a strategic management system, which is designed to link a company's long-term strategy with its short-term actions, using appropriate indicators. These indicators are

organised into four different perspectives, viz. financial, customer, internal business process, and learning and growth. Kaplan and Norton accentuate that

> "the scorecard provides a framework, a language, to communicate mission and strategy; it uses measurement to inform employees about the drivers of current and future success. By articulating the outcomes the organisation desires and the drivers of those outcomes, senior executives hope to channel the energies, the abilities, and the specific knowledge of people throughout the organisation toward achieving the long-term goals. The Balanced Scorecard should be used as a communication, informing, and learning system, *not* a controlling system" (Kaplan and Norton, 1996a: 24-25; emphasis in original).

The scorecard then aims at linking seemingly disparate elements of a firm's competitive agenda and attempts to synthesise these into a single management report (Kaplan and Norton, 1992). Kaplan and Norton's management report, in contrast to Sveiby's, is explicitly designed for internal usage, only. The authors emphasise that that the purpose of the Balanced Scorecard is "to gain clarification, consensus, and focus on their strategy, and then to communicate that strategy throughout the organisation" (Kaplan and Norton, 1996a: 19).

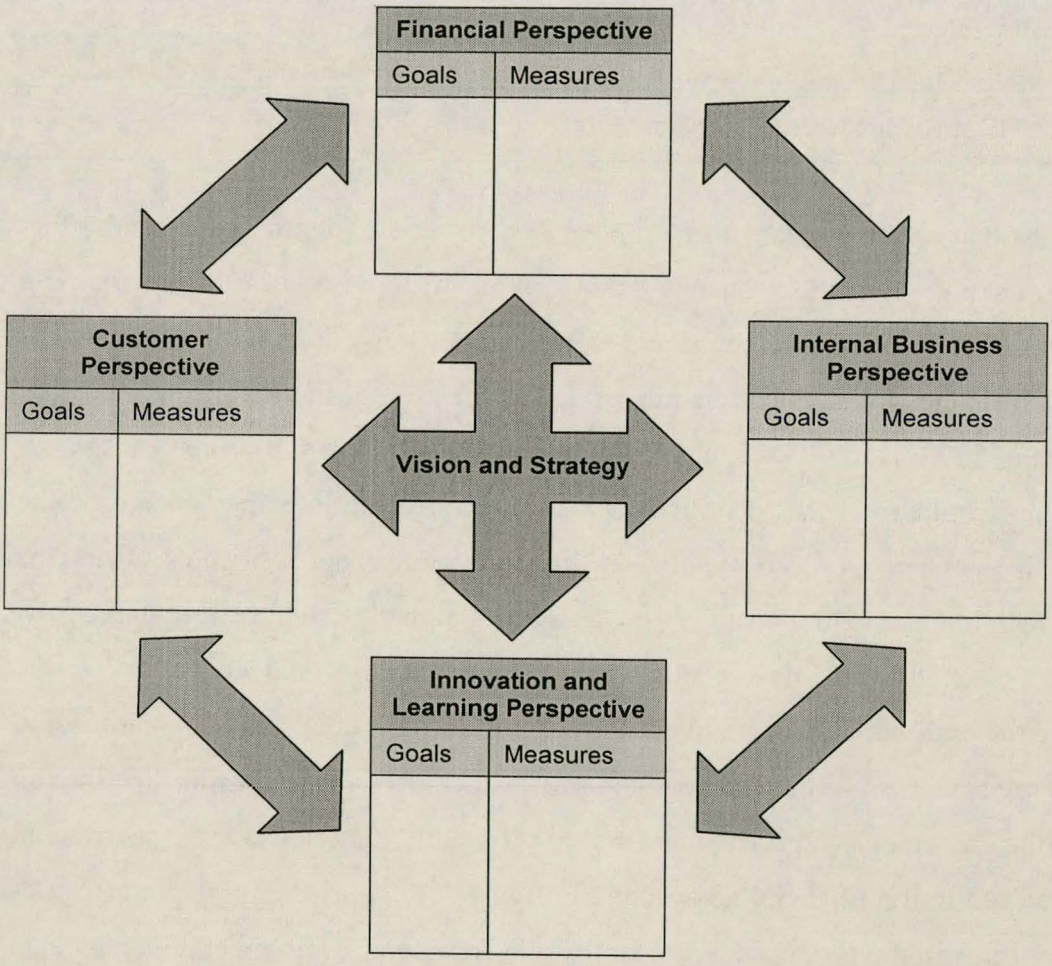
In combining seemingly disparate elements, the scorecard approach is designed to compel managers to scrutinise critical performance measures in conjunction. In this way, and through combining expanded performance measurement and strategic management the Balanced Scorecard appears to enable companies to find out whether improvement in one of the four perspectives has been achieved at the expense of another, and hence is designed to guard against suboptimisation (Kaplan and Norton, 1992; 1996a, 1996b). In view of these assignments, it must be appreciated that in essence, the Balanced Scorecard can be seen as both, an expanded performance *measurement* system, as well as a strategic *management* system (Kaplan and Norton, 1996b). With the background of the Balanced Scorecard involving the origins, rationale and purpose of the Balanced Scorecard understood, attention can shift to the operationalisation approach and tool itself.

5.3 Approach and tool

The present section aims at elucidating the approach and tool used by Kaplan and Norton in their interpretation of the Balanced Scorecard as an expanded performance measurement tool. To this end, a systematic analysis of the Balanced Scorecard and its four constituent

perspectives is made. For expository purposes this analysis is divided into the following parts: firstly, the approach of the Balanced Scorecard, which comprises three generic principles according to which a company's strategy can be translated into a set of concrete measures is discussed. Subsequently, the four scorecard perspectives (viz. financial, customer, internal business process, learning and growth) are introduced and concisely analysed. The four perspectives, in combined manner, form the Balanced Scorecard, which is illustrated in figure 5.1. Based on the insights developed throughout the chapter, the final section critically discusses the potential of the Balanced Scorecard as an ICM tool. At various instances throughout this chapter, Kaplan and Norton's approach to performance measurement is illustrated by means of practical cases. Where considered appropriate, comparisons are made with Sveiby's Intangible Asset Monitor, as presented in the foregoing chapter.

Figure 5.1: The Balanced Scorecard as intellectual capital measurement tool



Source: adapted from Kaplan and Norton, 1996a: 9.

5.3.1 Three generic principles for linking measures to strategy

Kaplan and Norton delineate three generic principles for linking measures to strategy, viz. firstly, cause-and-effect relationships; secondly, outcome measures and performance drivers; and finally the linkage to corporate financial objectives (Kaplan and Norton, 1996a). These principles form the basis for the construction of the Balanced Scorecard and are thus integral to an understanding of the tool. Each is outlined below and a brief case illustrating their interplay is provided.

5.3.1.1 Cause-and-effect relationships

According to Kaplan and Norton (1996a), a strategy is a set of relationships about cause and effect, which can be formulated in a sequence of "if-then" statements. The bottom line is that

> "every measure selected for a Balanced Scorecard should be an element of a chain of cause-and-effect relationships that communicates the meaning of the business unit's strategy to the organisation" (Kaplan and Norton, 1996a: 149).

The authors suggest that an appropriate measurement system should identify cause-and-effect relationships and make explicit the sequence of underlying hypotheses in order to translate strategy into concrete measures. The cause-and-effect relationships culminating in linkages and relationships to financial results can be interpreted as the crux of the Balanced Scorecard (Kaplan and Norton, 1992; Bontis, Dragonetti, Edvinsson, and Roos, 1999). Such cause-and-effect relationships would represent a rather sophisticated principle for the linkage of the individual scorecard perspectives. To recall from the foregoing chapter, it must clearly be emphasised that such linkage would be a very powerful tool in that it could conceptualise how a change in one perspective affects the other perspectives, i.e. it could conceptualise the "flows" between the individual perspectives. For example, the Balanced Scorecard could describe how an improvement in the learning and growth perspective would translate into an enhancement of the customer perspective, and would ultimately materialise in an increase in revenues as monitored in the financial perspective in figure 5.1. Thus, the principle of cause-and-effect relationships in the Balanced Scorecard would transcend Sveiby's approach, which would be ill-versed on conceptualising IC flows between the three forms of IC.

5.3.1.2 *Outcomes measures and performance drivers*

In order to link performance measures to strategy, the Balanced Scorecard employs two generic categories of measures, viz. firstly, mutually reinforcing performance measures (these are also referred to as "leading indicators"), and secondly, outcome measures (i.e. "lagging indicators"). Corporate strategy, in the Balanced Scorecard, needs to be translated into leading or lagging indicators. The relation between these generic measures forms an integral concept of the Balanced Scorecard. The authors emphasise that ,

> "a good Balanced Scorecard should have an appropriate mix of outcomes (lagging indicators) and performance drivers (leading indicators) of the business unit's strategy" (Kaplan and Norton, 1996a: 32).

The reason for the adoption two generic categories of measures seems to be the balance needed between the two in order to guard against suboptimisation. It is argued that outcome measures alone might not reveal how corporate results are operationally achieved, whereas a single focus on performance drivers could preclude a company from finding out whether operational improvements eventually have influenced corporate results. The Balanced Scorecard approach, incorporating both, performance as well as outcome-related measures seems generally more promising than Sveiby's explicit concentration on performance related measures, which Sveiby refers to as "indicators of efficiency."

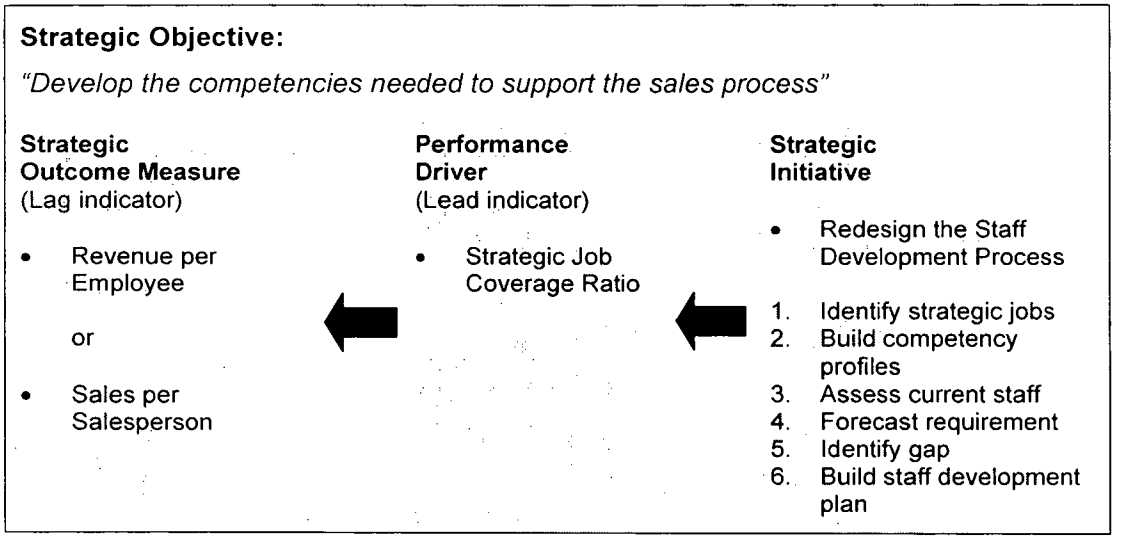
5.3.1.3 *Linkage to corporate financial objectives and indicators*

The explicit link of non-financial to financial objectives and indicators in an integrated and mutually reinforcing system that translates strategy into a coherent set of measures appears to be the crux of the Balanced Scorecard. It seems a reasonable conjecture that the correlation between non-financial and financial measures would have the potential to yield considerable benefits for organisations. In fact, as has been emphasised at various occasions in this text, this link can be seen as significant contribution to traditional performance measurement. For the purpose of the present study, the importance of the expanded logic behind the Balanced Scorecard, which in contrast to Sveiby, embraces both, financial as well as non-financial perspectives on corporate competitive dominance, should again be emphasised.

5.3.1.4 *The interplay of the three generic principles – the case of the Metro Bank*

The interplay of the three generic principles can best be appreciated by examining a concrete case. Figure 5.2 offers an illustrative overview of the three forgoing principles, which are designed to enable a company to translate its strategy or vision into a specific leading and lagging indicator. It draws from a case study of Metro Bank and shows the relationships of the scorecard measures to strategic initiatives. From the strategic objective "develop the competencies needed to support the sales process" the strategic initiative "redesign the staff development process" has been deducted and six managerial directives have been formulated. The performance driver for the competency development process was determined as "strategic job coverage ratio" which in turn was linked to the strategic outcome measures "revenue per employee" or "sales per salesperson", both of a financial nature (Kaplan and Norton, 1996a).

Figure 5.2: Increasing employee productivity



Source: Kaplan and Norton, 1996a: 154

In the case of Metro Bank, the logic of defining the strategic priorities and the measures that best describe them apparently led to the redefinition of a basic management program for strategic planning and execution. It appears not hypothetical to assume that without the strong logical systems thinking encouraged by constructing its Balanced Scorecard Metro Bank would not have addressed the redesign of staff development processes in such a systematic way. It thus appears that the Balanced Scorecard represents a valuable management tool for rethinking strategy and detecting relationships between strategic objectives and initiatives. In

this sense, it should again be appreciated that the Balanced Scorecard can usefully be interpreted as a management tool that addresses questions pertaining to the generation of strategic alternatives (see, e.g. Lyles, 1994), and their implementation (see, e.g. Eisenstat and Beer, 1994; Hart, 1994). With the logic behind the three generic principles to translate strategy into a coherent set of measures appreciated, analysis can proceed with the investigation of the four perspectives of the Balanced Scorecard.

5.3.2 Financial perspective

The first perspective of the Balanced Scorecard involves financial measures. Notwithstanding the fact that financial measurement forms per definitionem not directly part of IC measurement (Stewart, 1998; Sveiby, 1997; Brooking, 1996), for the purpose of this study, it is considered essential to link IC measurement results to financial indicators and objectives, quite simply because the ultimate aim of every business organisation would be profit making. It would appear that a possible error of omission, which a singular focus on IC would be making could be the exact obverse it accuses the traditional, financial, measurement and management systems of making, viz. it ascribes predominance to the "intellectual." In view of the objective to shed more light on ICM, it is considered useful to elucidate an approach in which ICM is conducted in conjunction with financial measurement. It must therefore be appreciated that the financial side of performance measurement is included in this thesis and should not be viewed as a contradiction to the intended focus on ICM but rather as a valuable supplement. The complementation of financial and IC perspectives would be inspired by the same mindset, which gave rise to the concept ICM in the first place, viz. holistic thinking.

This suggests that, in order to provide an enhanced understanding of the concept of ICM, it would be interesting to analyse how the Balanced Scorecard combines the financial with the three non-financial perspectives. Kaplan and Norton's approach to the financial perspective entails three basic steps. The identification of the company's business life cycle stage is defined as a first step, followed by the classification of financial objectives in three themes. In a third step, the two foregoing ones are combined in a three-by-three matrix, which aggregates the measures of the financial perspective. The three steps shall now be concisely discussed.

5.3.2.1 *Identification of the business life cycle stages*

The identification of the business life cycle stage constitutes a first step in linking the financial with the non-financial perspectives of the Balanced Scorecard. Kaplan and Norton argue that the business life cycle stage has fundamental implications for the strategy that a business unit may follow. Obviously, a business unit may follow a great number of alternative strategies, that would be impacted by the life cycle stage the business in question finds itself in (see e.g. Hasperslagh, 1982; MacMillan, 1982; Hofer and Schendel, 1978; Lyles, 1994). Within this line of thought, Kaplan and Norton suggest that three general stages of the business life cycle, viz. growth, sustain, and harvest, radically impact strategy formulation because the overall financial objectives for each are likely to differ.

Businesses that are in the "growth" stage of their life cycle are likely to be interested in percentage growth rates in revenues and sales growth rates in targeted markets, customer groups and regions. Businesses competing in the "sustain" stage of their life cycle are believed to rely on financial objectives related to profitability, e.g. gross margin or accounting income. Businesses having reached a mature phase of their life cycle seem to strive at "harvesting" investments, hence overall objectives include cash flow and reductions in working capital (Kaplan and Norton, 1996a).

5.3.2.2 *Classification of financial objectives*

In a step following the extrapolation of the three possible strategies that are related to each of the three business life cycle stages, Kaplan and Norton approach the measurement of the financial perspective by suggesting a threefold classification scheme that is believed to drive strategy, irrespective of the business life cycle. The three major themes of this classification are, firstly, revenue growth and mix; secondly, productivity improvement; and thirdly, cost reduction and asset utilisation. In brief, revenue growth and mix is designated to expand, change, and re-price the product or service offering, acquire new customers, and penetrate new markets. Cost reduction and productivity improvement essentially involves efforts to reduce direct and indirect costs for products and processes, and to share resources. The last theme, i.e. asset utilisation, is concerned with attempts to reduce the working capital levels, which are required to support a given volume and mix of business (Kaplan and Norton, 1996a).

5.3.2.3 *Aggregation of measures*

In a final step, the first two steps, identification of the business life cycle stage and the classification of financial objectives are aggregated in a three-by-three matrix (table 5.2). This matrix contains the indicators that are postulated for measuring whether a business enterprise would be able to increase the returns earned on its financial and physical assets.

Table 5.2: Measuring strategic financial themes

		STRATEGIC THEMES		
		Revenue Growth and Mix	**Cost Reduction/ Productivity Improvement**	**Asset Utilisation**
STRATEGY	**Growth**	• Sales growth rate by segment • Percentage revenue from new product, services, and customers	• Revenue/Employee	• Investment (percentage of sales) • R&D (percentage of sales)
	Sustain	• Share of targeted customers and accounts • Cross-sellings • Percentage revenues form new applications • Customer and product line profitability	• Cost versus competitors' • Cost reduction rates • Indirect expenses (percentage of sales)	• Working capital ratios (cash-to-cash cycle) • ROCE by key asset categories • Asset utilisation rates
	Harvest	• Customer and product line profitability • Percentage unprofitable customers	• Unit costs (per unit of output, per transaction)	• Payback • Throughput

Source: adapted from Kaplan and Norton, 1996a: 52.

At this point, it should briefly be emphasised that measures indicating whether a business enterprise is able to increase the returns earned on its financial and physical assets might not be of paramount relevance to all organisations. As has been pointed out on various occasions in this text, it is commonly acknowledged that the IC component of corporate market value is increasingly becoming bigger in many organisations. At the same time, the total value of physical assets tends to shrink (see, e.g. Sveiby, 1997; Harvey and Lusch, 1999; Stewart, 1998; Edvinsson and Malone, 1997). To this extent, companies should be cautioned against an overemphasis on returns earned by physical asset and redirected towards finding critical indicators of revenues earned by IC in order to be able to calculate the return on IC.

To summarise, the Balanced Scorecard should be welcomed for its explicit linkage of non-financial and financial measures. This linkage would be a major contribution in that it complements a singular focus on financial measures, which seems characteristic of traditional performance measurement systems. The Balanced Scorecard should furthermore be welcomed to the extent that it can be seen as an integrated ICM system that complements the systematic measurement and management of IC with a strong financial perspective. In important ways, the Balanced Scorecard would transcend other ICM systems (e.g. Sveiby's) that focus on IC, only.

5.3.3 Customer Perspective

The second perspective of the Balanced Scorecard involves the customers of the corporation. Kaplan and Norton, in line with a common wisdom in the marketing research realm (see, e.g. Kotler, 1988) hold that existing and potential customers are likely to have heterogeneous preferences. The customer perspective in the Balanced Scorecard involves two steps. In view of the heterogeneous preferences characterising customer segments, a first step for companies would be the identification of the customer and market segments in terms of these preferences. In a subsequent step, measures are selected for each of the targeted segments (Kaplan and Norton, 1996a, 1996b).

5.3.3.1 Market segmentation

Predicated on the belief that existing and potential customers are likely to be heterogeneous with regard to their preferences, Kaplan and Norton suggest, in line with Sveiby, to segment customers and markets. According to Kaplan and Norton, a useful strategy formulation process would be based on extensive market research indicating pertinent customer and market segments and the respective preferences along dimensions like price quality, functionality, image, reputation, relationship and service. This should enable a company to identify relevant customer and market segments and, as a reflection of its strategy, would also enable it to select and formulate objectives and measures for each of the targeted segments (Kaplan and Norton, 1992, 1996a).

The illustrative cases given by Kaplan and Norton reveal that traditional bases to market segmentation in the spirit of Kotler (1988) are promoted. Pioneer Petroleum, for instance, a

big US refiner and retail marketer of gasoline and automobile lubricants, applied a segmentation approach on the basis of demographic variables such as age and family life cycle, gender, family size, income, and occupation. Kaplan and Norton's approach seems to be in contrast with Sveiby's (Sveiby, 1997: 118-119), where customers would not be segmented using such traditional bases, but according to the intangible revenues, which they provide. Generally, Kaplan and Norton's segmentation approach appears to be a worthwhile starting point in view of selecting target customers, its merits for the IC context, however, would need to be scrutinised. It can be speculated that the Balanced Scorecard approach could inadequately obscure many of the intangible revenues, Sveiby's model seeks to capture. To alleviate this inadequacy, the possible merits of Sveiby's logic in segmenting customers seem to suggest interesting avenues for further investigations.

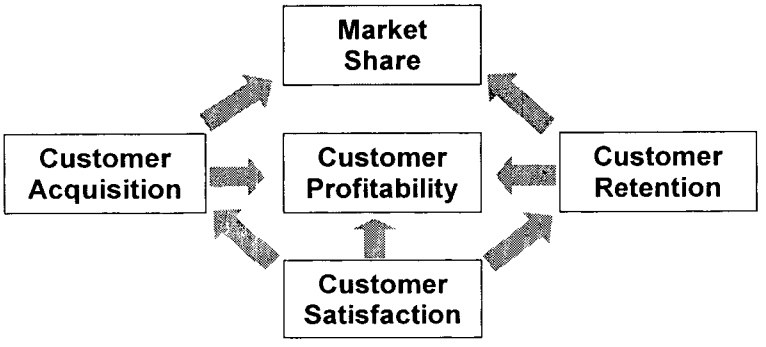
5.3.3.2 Selecting measures for the identified segments

The selection of measures for the customer perspective follows the principles delineated earlier in this chapter, i.e. a company should identify two sets of measures, viz. firstly, outcome measures, and secondly, performance drivers.

5.3.3.2.1 Determining outcome measures

After having identified the targeted segments, so Kaplan and Norton, an organisation can select and establish appropriate measures. The authors advise to concentrate first and foremost on the generation of a set of outcome measures. Kaplan and Norton have found out that generic measures such as market share, customer acquisition, customer retention, customer satisfaction, and customer profitability are prevalent in most Balanced Scorecards across industries and are thus referred to as the "core measurement group" (Kaplan and Norton, 1996a: 67). The customer core measurement group can, in line with the three basic principles according to which a company can translate its strategy into concrete measures, be interpreted as a causal chain of relationships. The core measurement group as a causal chain of relationships is illustrated in figure 5.3.

Figure 5.3: Core measurement group of the customer perspective



Market Share	Reflects the proportion of business in a given market (in terms of numbers of customers, dollars spent, or unit volume sold) that a business unit sells.
Customer Acquisition	Measures, in absolute or relative terms, the rate at which a business unit attracts or wins new customers or businesses.
Customer Retention	Tracks, in absolute or relative terms, the rate at which a business unit retains or maintains ongoing relationships with its customers.
Customer Satisfaction	Assesses the satisfaction level of customer along specific performance criteria within the value proposition.
Customer Profitability	Measures the net profit of a customer, or a segment after allowing for the unique expenses required to support that customer.

Source: Kaplan and Norton, 1996a: 68.

5.3.3.2.2 Determining performance drivers

Kaplan and Norton complement outcome measures (i.e. lagging indicators) with performance measures (i.e. leading indicators). It is argued that ideally, the complementary leading indicators should reflect customer value propositions, which can be interpreted as drivers for the core measurement group. To accommodate value propositions from different industries and customer segments, a common, standardised, denominator has been established by the authors, which comprises three generic categories of value propositions. It is argued that in most cases, customer value consists of, firstly, product and service attributes such as functionality, quality, price, and time; and secondly, the image and reputation a firm has, and thirdly, the relationship a company has to its customers. These three value proposition, each on its own account and all in combined manner, are believed to determine the customer value (Kaplan and Norton, 1992, 1996a).

In this context it should be appreciated that Kaplan and Norton's suggestions as to what customers perceive as valuable in products seems to cover and synthesise well a wide spectrum of possible value propositions from different industries and customer segments. It

must however be emphasised that an important area of neglect in the suggested approach appears to be the lack of attention devoted to "the dangers of being customer led" (Hamel and Prahalad, 1994). This negligence could be related to the fact that Kaplan and Norton commit themselves to "retrospective aspects of value propositions" (i.e. those that become evident once the product has been sold), rather than value propositions that are inspired by what Hamel and Prahalad have termed "industry foresight." The retrospective nature of the Balanced Scorecard would make it difficult to anticipate what range of benefits customers might value in tomorrow's products, and how the firm might through innovation pre-empt competitors in delivering these to the marketplace. In fact, the retrospective orientation is likely to engender misleading results against the background of fast moving and complex competitive environments, which are characterised by increasingly shorter innovation cycles (Burgelmann, Maidique, and Wheelwright, 1996; Lissack and Roos, 1999; Tidd, Bessant and Pavitt, 1997). The generation of such future-oriented measures for the customer dimension seem to suggest worthwhile areas for future research, in order to guard the Balanced Scorecard in particular, and ICM tools in general against the "dangers of being customer led."

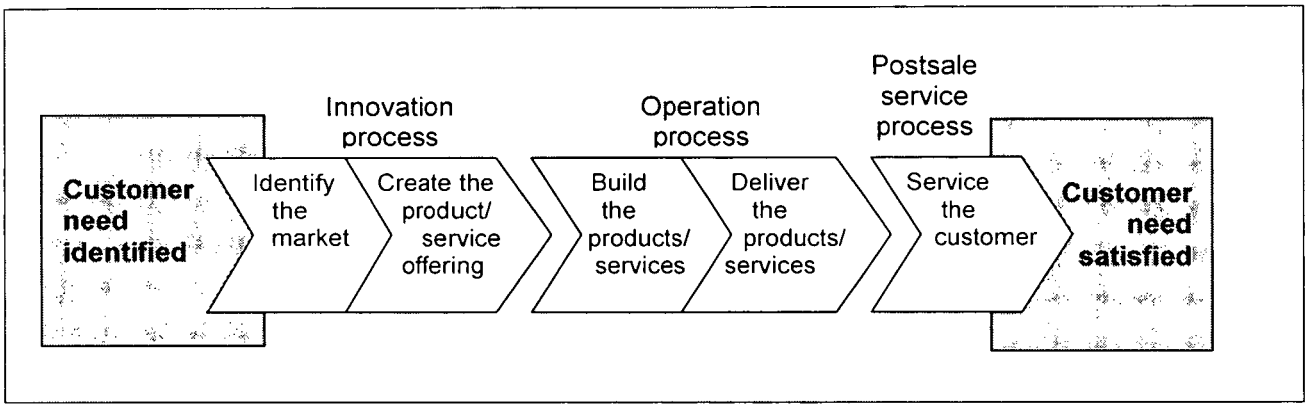
To summarise the customer perspective in the Balanced Scorecard, it must be remembered that this perspective, similarly to Sveiby, represents the only focus on the external environment of the firm. Notwithstanding the fact that the Balanced Scorecard's rationale draws strongly on the industry and competitive analysis articulated by Porter (Porter, 1980, 1985), it would appear that the external environment in which competition occurs is only partly reflected by the customer perspective. Recalling Porter's five forces framework obviates that the customer dimension of the Balanced Scorecard would only comprise one of the five forces, viz. buyer power. A related criticism can also be found in the literature. For example, Bontis, Dragonetti, Jacobsen, and Roos proclaim that Kaplan and Norton's considerations are limited to customers only although companies interact with other actors, such as suppliers alliance partners, local community, unions, and final customers (Bontis, Dragonetti, Jacobsen, and Roos, 1999).

5.3.4 Internal-business-process perspective

Kaplan and Norton propose to identify the internal business process perspective after having established leading and lagging indicators for the financial and customer perspectives. It is maintained that this sequence allows firms to align measures derived from internal processes

with expectation of shareholders and targeted customers (Kaplan and Norton, 1996a). In their approach to develop measures for the internal-business-perspective, Kaplan and Norton recommend the determination of an "internal-process value chain" (Kaplan and Norton, 1996a: 92) consisting of three generic processes, viz. innovation, operations, and postsale service. The suggested approach, reminiscent of Porter's value chain concept (Porter, 1980, 1985), is depicted in figure 5.4. The constituent processes shall briefly be discussed in turn.

Figure 5.4: The generic value-chain model of the internal-business-process perspective



Source: Kaplan and Norton, 1996a: 96.

5.3.4.1 Innovation process

As evident from figure 5.4, the innovation process consists of two components, viz. the identification of the market and the creation of a suitable product and service offering. Identifying the market primarily involves market research to find out the market size, nature of customers' preferences, and price points for the targeted product or service. For example, in the case of Rockwater, an undersea construction company whose clients are major oil, gas, and offshore construction companies, the objective for the innovation process was to encourage its employees to spend more time in detecting customer needs and provide innovative solution to these needs. Scrutiny of Kaplan and Norton's innovation process leads to draw the inference that Hamel and Prahald's "industry foresight" (1994) that apparently was neglected in the customer perspective seems to be largely covered in the internal business process perspective. Measures suggested by Kaplan and Norton include "number of entirely new products," "success in developing specific products," and the "preparation of the market research" (Kaplan and Norton, 1996a: 100-101).

The creation of suitable products as the second step of the innovation process comprises three tasks, viz. firstly basic research to develop new products; secondly applied research to exploit existing products, and thirdly focused marketing of new products. For example, measures for the first two steps would include "percentage of sales from new products or from proprietary products," and for the third step "break even time," a metric developed by Hewlett-Packard measuring the effectiveness of its product development cycle (Kaplan and Norton, 1996a: 100-104). Interestingly, the second step seems to reflect the essence of the resource-based paradigm according to which existing products or services solutions should be leveraged and systematically be deployed (Coombs, 1996; Hamel and Prahalad, 1993). This would suggest that while the Balanced Scorecard is, according to Kaplan and Norton, conceived within the Porterian paradigm of strategy, it reveals strong elements characteristic of the resource based paradigm. This aspect will receive further exploration in the critique of the tool towards the end of this chapter.

5.3.4.2 Operation process

The operation process starts with the receipt of a customer order and ends with the delivery of the finished product, thereby spanning in conjunction with the postsale service process the concept of the value chain in the sense of Porter (1985). According to Kaplan and Norton, "this process stresses efficient, consistent, and timely delivery of existing products and services to existing customers" (Kaplan and Norton, 1996a: 104). Possible measures draw from a scope of three major categories, viz. time (e.g. manufacturing cycle effectiveness), quality (e.g. waste, rework, process parts per million), and cost metrics (e.g. ABC anlysis).

5.3.4.3 Postsale service process

The last compound of the generic value chain of the Balanced Scorecard framework, the postsale service processes, is similarly to the previous compound, rather straightforward. It refers to warranty and repair activities, treatment of defects and returns, and the processing of payments. It is reasoned that this process enables a firm to discern when appropriate, important aspects of service that are not part of the actual purchase have been delivered to the customer. Concerning indicator selection, Kaplan and Norton suggest to measure the performance of the postsale service process drawing from the same categories as described above.

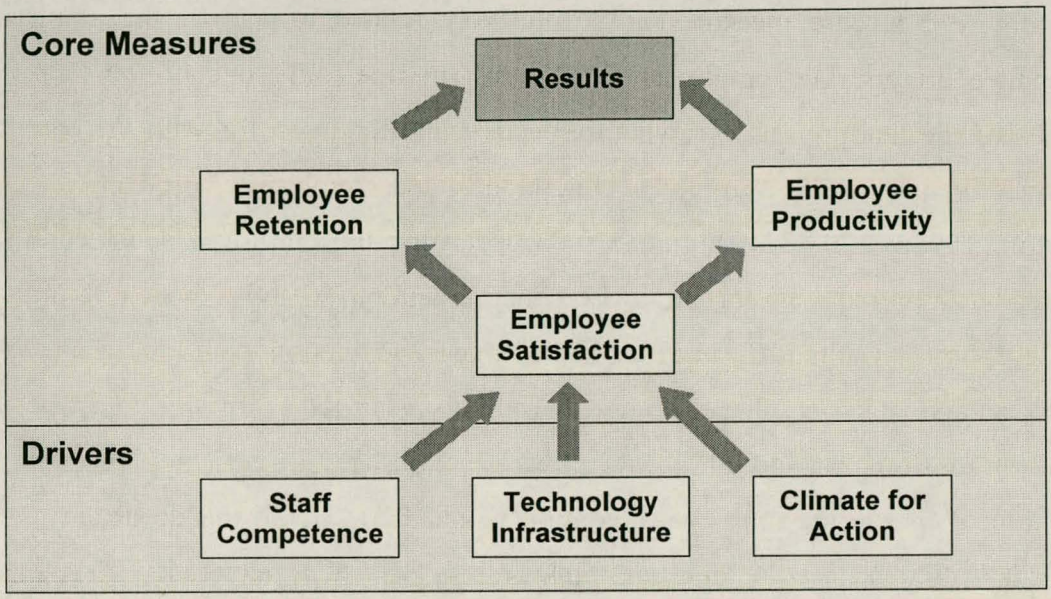
To summarise the internal-business-process perspective of the Balanced Scorecard, it must be emphasised that this building block seems to draw heavily on the Porterian value chain framework. It therefore seems much more encompassing than Sveiby's singular focus on support staff in the internal structure of the Intangible Asset Monitor. It must be appreciated, however, that while the Porterian framework seems to be invoked by Kaplan and Norton, strong elements of the resource based paradigm to strategy can be observed.

5.3.5 Learning and growth perspective

Kaplan and Norton seem to have designed the three foregoing perspectives of the Balanced Scorecard in order to find out what the organisation must excel at to accomplish breakthrough performance. The fourth, learning and growth, perspective in turn is designed to provide the infrastructure required for achieving the goals of the other three perspectives. It has been emphasised by a variety of authors that excellent customer value, efficient processes, and exceptional shareholder value can only be delivered if a company constantly improves, innovates, and grows (see, e.g. Burgelmann, Maidique, and Wheelwright, 1996; Johanson and Swigart, 1991; Buys, 1999). To this end, it is seen indispensable for business enterprises to invest in their "infrastructure" (Kaplan and Norton, 1996a: 127). The authors identify three principal categories of this infrastructure, viz. firstly employee capabilities, secondly motivation, empowerment, and alignment, and thirdly information systems capabilities (Kaplan and Norton, 1992, 1996a).

Parallel to the three foregoing perspectives, Kaplan and Norton approach the measurement of the learning and growth perspective by establishing lagging (i.e. core measures) and leading indicators (i.e. performance drivers). Figure 5.5 depicts the suggested indicators and shows the inherent dynamics of the measurement process. It is unclear why the authors derive performance drivers from the three principal categories of the learning and growth perspective, when core measures are apparently related to only one, viz. employee capabilities. Due to this, the learning and growth perspective seems less logically structured and straightforward than in the three previously discussed scorecard perspectives. With this fact in mind, a brief delineation of firstly, performance drivers, and secondly, core measures as suggested by Kaplan and Norton (1996a) can be analysed.

Figure 5.5: The learning and growth measurement framework



Source: adapted from Kaplan and Norton, 1996a: 129.

5.3.5.1 Performance drivers

The performance drivers of the learning and growth perspective are, although terminologically not identical, congruent with the principal categories of the learning and growth perspective and thus also threefold. Kaplan and Norton posit that staff competencies, technology infrastructure, and climate for action would best reflect the situation-specific dimensions, which organisations typically draw their performance drivers from. In measuring staff competence with drivers such as strategic skills, training levels, and skill leverage, the key strategic theme would be to reskill or upgrade the abilities of the work force in order to achieve the corporate vision. Further, it is held that even highly skilled employees are unlikely to contribute to organisational success if they are not well motivated to act. Hence, the climate for action dimension to be measured by means of key decision cycles, strategic focus, staff empowerment, personal alignment, morale and teaming. Underlying the two above mentioned dimensions resides the assumption of information technology systems constituting an enabler. Technology infrastructure performance drivers are according to the authors derived from technology, i.e. strategic technologies, strategic databases, and experience capture.

5.3.5.2 *Core measures*

As evident from figure 5.5, core measures are exclusively related to one of the above discussed performance drivers, viz. employee capabilities. In line, only one of the three principal categories of the learning and growth perspective, is accounted for with the core measures "employee satisfaction," "employee retention," and "employee productivity" (Kaplan and Norton, 1996a: 129-132). Figure 5.5 suggests that the employee satisfaction objective can be read as a prerequisite for employee retention and productivity, which in turn would influence corporate results. An insight in employee satisfaction could be gained through conducting an annual survey that is arranged around issues such as involvement with decisions, recognition for doing a good job, or overall satisfaction with the company, propose the authors. The aim of measuring employee retention would be to avoid the departure of employees the organisation has made long-term investments in, i.e. a depletion of IC. A classical measure for employee retention seems to be the "percentage of key staff turnover." Employee productivity would be calculated involving the aggregate impact of multiple sources (e.g. "intervention with customers" or "efficiency of internal processes"). Kaplan and Norton suggest revenue per employee as an indicator for employee productivity, mainly for the reasons that it is relatively easy to calculate (Kaplan and Norton, 1996a).

In summary, the learning and growth perspective of the Balanced Scorecard is composed of three major building blocks, viz. employee capabilities, information system capabilities, as well as motivation, empowerment and alignment. To this extent, the Balanced Scorecard would go beyond Sveiby's Intangible Asset Monitor, in that Sveiby's "employee competence" becomes only one component of a wider infrastructure comprising three building blocks. Recalling the anatomy of IC, which accords explicit attention to human capital (see chapter 2) seems to suggest however that the more encompassing view on corporate learning and growth in the Balanced Scorecard framework could also contribute to a neglect of the important constituent human capital. This aspect will receive further attention in the next section.

5.4 *A critique of the Balanced Scorecard as intellectual capital management tool*

The four perspectives of the Balanced Scorecard, which can for the purpose of this thesis usefully be interpreted as the three forms of IC plus a financial dimension, have been analysed in the previous sections. In the remaining part of this chapter, the suitability of the Balanced Scorecard as an ICM tool shall be critically discussed. To this end, emphasis shall be placed on the following aspects: firstly, the potential of the learning and growth perspective for ICM purposes should be scrutinised; secondly, the intellectual indebtedness to Porterian theories and its implications would be interesting to examine; thirdly, the explicit linkage to financials in the Balanced Scorecard and its ramifications for ICM theory would need to be analysed; fourthly, the restriction of the purpose of the tool for internal usage should be contemplated; finally, an analysis of the potential of the Balanced Scorecard as an ICM tool can be made.

5.4.1 The learning and growth perspective - a proxy for human capital

As the foregoing analysis has revealed, the learning and growth perspective of the Balanced Scorecard seems to be less logically structured and intuitively plausible as the foregoing ones. Close scrutiny of this perspective has suggested that this inadequacy can mainly be ascribed to three areas, viz. firstly, terminological inconsistencies; secondly, structural discrepancies; and thirdly, inadequate treatment of human capital. Terminologically, Kaplan and Norton establish three principal categories for the learning and growth perspective, i.e. employee capabilities, information systems capabilities, as well as motivation, empowerment, and alignment (Kaplan and Norton, 1996a: 127). However, in the course of their argumentation (see the learning and growth measurement framework as depicted in figure 5.5), the terminology changes to staff competencies, technological infrastructure, and climate for action. Interestingly, and to the confusion of the reader, Kaplan and Norton later switch back to the first designations, except for the term employee capability, which is now referred to as "reskilling the workforce" (Kaplan and Norton, 1996a: 132).

With regard to structural discrepancies, it should be noted that although Kaplan and Norton identify three principle categories pertaining to the learning and growth perspective, outcome measures are exclusively identified for employee related objectives (Kaplan and Norton, 1996a: 129). To complicate matters even further, performance drivers for the outcome

measures are suddenly derived from all three categories. This incommensurate treatment of leading indicators (i.e. performance drivers) and lagging indicators (i.e. outcome measures) could be critisised, not only because it detrimentally affects an understanding of the framework as such, but also because it would compromise its usefulness in practice. It would appear that a more practical and cogent way to structure the learning and growth perspective would have been to firstly identify relevant categories and secondly derive lagging and leading indicators for each of these categories individually.

Finally, in addition to the above revealed inconsistencies, a substantial weakness to be attributed to the learning and growth perspective seems to reside in Kaplan and Norton's inadequate treatment of corporate human capital. This has also been acknowledged by Bontis, Dragonetti, Jacobsen, and Roos, who proclaim that a

> "problem the BSC has is its consideration of employees almost as an afterthought. *Personnel is lumped together with IT systems* into the learning and growth perspective...As a consequence, the specific challenge of managing people and their knowledge is underestimated by the BSC. More than that, knowledge is reified, i.e. it is treated like a physical thing: this misconception might reinforce the mistake many companies make, to believe that the creation of an IT system is enough to automatically manage knowledge" (Bontis, Dragonetti, Jacobsen, Roos, 1999: 397, emphasis added).

Clearly, information technology is an important factor in the management of corporate knowledge, yet its importance should not be overemphasised. There is increasing empirical evidence that an overestimation of information technology introduces serious hazards (see, e.g. Zuboff, 1988). A reasonable approach to the use of a company's technological infrastructure seems to view it as support system enabling effective communication between the corporate staff (see, e.g. Davenport, 1994; Davenport and Marchand, 1999; Hallowell, 1999).

5.4.2 The intellectual provenance of the Balanced Scorecard and its implications

A discussion of the intellectual provenance of the Balanced Scorecard and its implications would form an integral component of a critique of this measurement and management tool. The line of reasoning of the present section would revolve around two arguments. Firstly, an apparent inconsistency in the logic underlying the Balanced Scorecard would need to be

demonstrated: while the Balanced Scorecard is, according to Kaplan and Norton, conceived within the Porterian paradigm of strategy, it reveals strong elements characteristic of the resource based paradigm. Secondly, it shall be demonstrated that this apparent inconsistency needs not necessarily be viewed as undesirable.

As was outlined before, Kaplan and Norton have emphasised their intellectual indebtedness to Porter's theories. It would appear that in organisations competing according to Porter's rules strategic product market positioning represents a crucial task for managers: the managerial focus in the Porterian paradigm seems to be concerned with finding the optimum solution for combining products and markets given the bargaining power of the suppliers and customers, entry barriers, and potential substitute products (Porter, 1980). In terms of sustaining corporate strength Porter offers a well known scenario of three generic strategies, involving firstly, "overall cost leadership strategy," in which strength is derived from a rigorous exploitation of economies of scale, secondly, "differentiation strategy," largely based on continuous improvement and innovation concerning processes as well as product features, and thirdly, "focus strategy," which revolves around serving specific segments more effectively (Porter, 1985; Belohlav, 1996). These constitute, according to Kaplan and Norton (1996a), the main strategic principles the Balanced Scorecard relies on.

It should however be appreciated that strong adherence in the Balanced Scorecard to Porter's principles could be inadequately biased to the extent that it overemphasises a product-market orientation at the expense of ignoring the strategic relevance of corporate resources, as a number of scholars hold (Barney, 1986; Teece, Pisano, and Shuen, 1990; Hall, 1992; Nanda, 1996). The general management field has been deeply involved with detecting sources of sustainable competitive advantage other than those proposed by Porter. It has been found that corporate resources are most highly associated with strategic success (Penrose, 1959; Wernerfelt, 1984; Rumelt, 1984; Hall, 1994). As a result, considerable work has been undertaken to establish an inward, "resource-based view of the firm" (Dierickx and Cool, 1989; Hamel and Prahalad, 1990; Barney, 1991; Peteraf, 1993) in reaction to the perceived outward bias epitomised by the Porterian paradigm. This resource based view essentially involves looking inside, rather than outside the firm.

The potential inadequacies associated with an orthodox Porterian approach to strategy would suggest the merits of an alternative, resource based view on the Balanced Scorecard. In fact,

the analysis of the Balanced Scorecard and its four perspectives in the course of this chapter revealed that this performance measurement tool seems to obviate strong elements of the resource based approach to strategy. An indicator, which would reveal an application of the resource based paradigm has been pointed out by Itami. This author argues that strategies in the resource based paradigm would involve not only a scrutiny of the external environment but would predominantly be concerned with an inward orientation, i.e. a scrutiny of the optimal usage of a firm's resources (Itami, 1987). Itami's interpretation seems to be captured to a large extent by the four perspectives, which embrace predominantly inward perspectives on corporate resources (i.e. the financial, the internal business, and learning and growth), and only one external perspective (i.e. the customer). From this angle, it seems that three perspectives of the Balanced Scorecard are essentially inward, i.e. on critical firm resources, rather than outward, i.e. on appropriate product market positioning. In fact, it has been emphasised before, that the customer building block as the only perspective with an outward orientation, seems to be an incomplete reflection of the five forces that characterise Porter's strategy framework. These observations would clearly suggest an intellectual indebtedness of the Balanced Scorecard to the resource based paradigm, rather than to the Porterian, as suggested by the authors.

The above analysis would be indicative of an inconsistency in the logic of the authors. Such inconsistency, however, need not necessarily be viewed as undesirable. The foregoing sections revealed that the four perspectives of the Balanced Scorecard in general, and the three non-financial perspectives in particular are, in line with Sveiby's Intangible Asset Monitor, designed to respond to internal as well as well as external foci. This approach should clearly be welcomed to the extent that it accommodates a duality of internal and external aspects of corporate strategy design. The importance of accommodating this duality has been outlined by various authors of the management realm (see, e.g. Hamel and Prahalad, 1993, 1994; Leonard Barton, 1995; Nanda, 1996) and would certainly enhance the potential of the Balanced Scorecard.

5.4.3 The explicit linkage to financials in the Balanced Scorecard

In analysing the Balanced Scorecard, it should be recalled that its rationale does not originally stem from IC theory and practice. As has been indicated above, Kaplan and Norton's intent does not seem to have been the design of an ICM tool but rather the construction of an

organisational performance measurement tool, which embraces financial and non-financial perspectives (Kaplan and Norton, 1992; 1996a). The important point is that for the purpose of this study, the non-financial perspectives of the Balanced Scorecard can usefully be interpreted as building blocks of IC. To the extent that the Balanced Scorecard as an expanded performance measurement tool complements financial with non-financial indicators, thereby introducing a more encompassing framework than Sveiby's singular focus on IC, Kaplan and Norton's rationale should clearly be welcomed and can be interpreted as a contribution to ICM theory.

The interpretation of the three non-financial perspectives of Balanced Scorecard as three building blocks of IC would need some elaboration. In order to complement financial measures with non-financial measures, three perspectives (or building blocks of IC) are adopted in Kaplan and Norton's analysis, viz. the "customer," "internal business process," and "learning and growth" perspectives. Recalling the findings of chapter 2 where most eminent IC models have been comparatively analysed and synthesised, Kaplan and Norton's suggested categories appear to be largely congruent with the synthesised sub-forms of IC as depicted in figure 2.6, i.e. "external capital", "internal capital", and "human capital." Thus, it seems plausible to view the Balanced Scorecard as an ICM approach and tool.

In this context, it should be appreciated that Kaplan and Norton themselves emphasise that "companies will succeed by investigating in and managing their *intellectual assets*" (Kaplan and Norton, 1996: 18, emphasis added). There is also evidence for the fact that leading experts in the IC realm mutually acknowledge the Balanced Scorecard as an ICM approach and tool (see e.g. Sveiby, 1997, 1998a; Edvinsson and Malone, 1997). Conversely, Kaplan and Norton devote some attention to the achievements of Skandia. It is argued that the Skandia Navigator can also be seen as an expanded Balanced Scorecard (Kaplan and Norton, 1996a: 210-212). It can hence be argued that the above facts, individually and in conjunction, justify the conjecture that the Balanced Scorecard can, for the purpose of the present study, be read as an ICM approach and tool combining traditional financially oriented performance measurement with the measurement of corporate intangible assets. It is thus believed that the presentation of the Balanced Scorecard contributes to and enhances the understanding of ICM.

To the extent that the Balanced Scorecard is interpreted as an ICM tool, the explicit linkage of non-financial measures to financials would go beyond ICM models, which are primarily concerned with IC (i.e. those assets that are by definition non-financial), such as Sveiby's Intangible Asset Monitor, with its characteristic focus on IC, only. This view is authenticated by Bontis, Dragonetti, Jacobsen, and Roos, who accentuate that one of the chief accomplishments of Kaplan and Norton's approach is the explicit correlation between IC indicators and financial measures and objectives (Bontis, Dragonetti, Edvinsson, and Roos, 1999). Thus, the Balanced Scorecard would clearly transcend Sveiby's Intangible Asset Monitor, which pursues ICM isolated from traditional, i.e. financial performance measurement. In Sveiby's approach, an IC report only submitted as a supplement to the annual report rather than as integral part.

5.4.4 Restriction of the Balanced Scorecard to internal usage

Revisiting the purpose of the Balanced Scorecard reveals that this tool is designed specifically as an internal document. In contrast, Sveiby's Intangible Asset Monitor seems to be characterised by a dual purpose, viz. it may serve as an internal document and it may also be used for external reporting. For the purpose of this study, the merits of the Balanced Scorecard's the explicit concentration on internal usage should be contemplated.

It is noteworthy that restricting the purpose of the Balanced Scorecard to internal usage would limit its potential as an ICM tool. More precisely, a single concentration on internal usage could preclude a company from external reporting of both, its IC and financial status to external share- and stakeholders. As the analysis in this chapter has attempted to show, the Balanced Scorecard would have great potential as an ICM system for external reporting, because this management system would combine the two building blocks of corporate market value (i.e. IC and the book value) in one integrated report. In this respect, it should be again be emphasised that, if used for purposes of external reporting, the Balanced Scorecard would transcend Sveiby's ICM approach with its singular focus on IC. Revising and/or adapting the format of the Balanced Scorecard in order to make it more suitable for external reporting purposes would suggest fruitful avenues for further research.

5.4.5 An interpretation of the Balanced Scorecard as a system for managing intellectual capital

On a concluding note, it should be emphasised that the Balanced Scorecard seems to have potential for further exploitation as a tool explicitly for the purpose of managing IC. In fact, Kaplan and Norton have already transcended their early vision of the Balanced Scorecard merely constituting a performance *measurement* tool (Kaplan an Norton, 1992) and established an approach to use it as a strategic *management* system. The authors emphasise that "the real power of the Balanced Scorecard occurs when it is transformed from a measurement system to a management system" (Kaplan and Norton, 1996a: 19). Similarly, in a recent publication, the authors clearly make the point that the Balanced Scorecard constitutes a valuable tool for managing corporate performance (Kaplan and Norton, 1998). To this end, four recursive processes are organised around the traditional scorecard, i.e. translating the vision, communicating and linking, business planning, and feedback and learning (Kaplan and Norton, 1996a, 1996b).

In this respect, an interesting route warranting further investigations appears to be the suitability of these processes to ICM. To recall Sveiby, the Intangible Asset Monitor is explicitly designed as a measurement tool for IC (Sveiby, 1997). To the extent that the Balanced Scorecard offers a platform for further expansion as a management tool for linking long-term strategic objectives with short-term actions (Kaplan and Norton, 1996b), Kaplan and Norton's approach would, by analogy, suggest similar ventures for ICM approaches and tools, e.g. Sveiby's Intangible Asset Monitor. As has been suggested at various occasions throughout the text, the three non-financial perspectives of the Balanced Scorecard can be seen as representative of the three generic building blocks of IC. This would be indicative of the potential of Kaplan and Norton's framework as an ICM approach and tool, thereby going beyond the context for which it originally was conceived.

5.5 Summary

In this chapter, an approach and tool to the measurement and management of intangible assets that does not emanate from the ICM research realm was critically analysed, viz. the Balanced Scorecard. This framework represents an expanded organisational performance measurement tool, which complements a financial perspective with three non-financial perspectives. These non financial perspectives can, for the purpose of the present thesis, be interpreted as building

blocks of IC, hence suggesting the value of the Balanced Scorecard as an ICM approach and tool.

While the Balanced Scorecard does not represent an ICM approach in a strict sense, the present chapter was, inter alia, concerned with demonstrating its suitability for ICM purposes. It was illustrated that the basic structure and approach of the Balanced Scorecard suggests a strong intellectual kinship with ICM models. On the basis of its relatedness, three important insights could be gained for ICM theory.

- It could firstly be demonstrated that the combination of financial and non-financial perspectives in an integrated framework would represent a useful contribution to conventional ICM models, such as the Intangible Asset Monitor by Sveiby, which seems to be characterised by a singular focus on IC only. To the extent that the Balanced Scorecard links financial with non-financial measurement and management it can be interpreted as holistic management tool, which accords explicit attention to the two constituent parts of corporate market value in conjunction.

- Analysis further indicated that while the Balanced Scorecard is typically interpreted as a measurement tool, it seems to have the potential for further exploration as a management tool that links long-term strategic objectives with short-term goals. To the extent that this framework can be used as a management approach, it would transcend ICM approaches, such as Sveiby's that are predominantly concerned with measuring intangible assets.

- A third aspect that should not be overlooked is the fact that the Balanced Scorecard was explicitly developed for a wide spectrum of industries, e.g. service industries, consumer, and physical asset intensive industries. It should be appreciated that this would be in contrast to Sveiby's singular focus on know-how and service companies, which seemed to limit the potential applicability of the Intangible Asset Monitor. This would in turn suggest that the Balanced Scorecard can be interpreted as an ICM approach and tool of wide applicability to a variety of industries.

These three aspects, separately and in conjunction, seem to make the Balanced Scorecard a highly sophisticated ICM approach and tool of great potential for a wide variety of industries.

Its limitations, however, should not be overlooked. The most important limitation is inherently linked to the purpose of the tool as an internal document. This interpretation of the Balanced Scorecard as an internal document would compromise its suitability for external reporting. Such external reporting to corporate share- and stakeholders, however, would be an important task for ICM models.

Chapter 6: The Skandia IC Navigator

6.1 Introduction

In this chapter, the "Skandia IC Navigator" shall be explained and critically discussed as third approach and tool to ICM." The choice of this very model has been found appropriate for the purpose of the present thesis because it draws from both previously analysed models, viz. the Intangible Asset Monitor and the Balanced Scorecard. It can hence be interpreted as sophisticated approach, which seems to reconcile European with North-American streams of thought. On the one hand, the Skandia IC Navigator, similarly to Sveiby's Intangible Asset Monitor, specifically emphasises IC. On the other hand, and in line with Kaplan and Norton's Balanced Scorecard, it considers intangible assets in conjunction with financial performance measurement. This combinatory approach seems to suggest that it would be particularly interesting to examine the Skandia IC Navigator.

As was customary in the previous two chapters, the model to be analysed in the present chapter will firstly be portrayed against the background of its origin, rationale and purpose. With this understanding, the approach and tool itself can better be appreciated and understood. Specific emphasis throughout this discussion will be given to the scrutiny of the sophistication of the Skandia model relative to the other two approaches in dealing with IC. The last section of this chapter will do so in detail.

6.2 Origin, rationale and purpose of the Skandia intellectual captital Navigator

As with the two foregoing ICM tools, an analysis of the origins, rationale, and purpose of the Skandia IC Navigator is intended to portray the ICM tool under examination against the background of intellectual and practical developments that have shaped its present form.

6.2.1 Origin

Skandia, the Swedish insurance and financial service company appears to be in the vanguard of operationalising a theory of IC. Along with Sveiby, this company seems to form the most important contributors of the "Swedish community of practice" (Sveiby, 1996). The idea to construct a new managerial tool has emerged in the 1980s when Skandia's management staff began to realise that traditional management theory did not reflect appropriately changes in

the competitive environment of the company. It was recognised that intangible assets, which were at that point in time perceived as ineffable, increasingly determined the environment Skandia was competing in. In addressing the problem of visualising the true value of Skandia, a new corporate function was founded, headed by Leif Edvinsson as first Director of Intellectual Capital, in order to grow and develop the company's IC as visible lasting and value complementing the traditional balance sheet. Thus, the Navigator was developed by trailblazing practitioners as a response to the increasingly paramount role IC seemed to assume in Skandia's performance (Edvinsson and Petrash, 1996; Edvinsson, 1998a; Edvinsson and Malone, 1997).

The team of the new corporate function discerned four distinct areas of focus, viz. "financial," "customer," "process," as well as "renewal and development" and one area underlying these, viz. the "human focus." Performance measures have been developed for each area in turn. In conjunction, these five building blocks are intended to represent a holistic and dynamic model that may be used to "navigate" a company holistically, hence its name "Navigator" (Edvinsson and Malone, 1997). In 1993, the first report in IC was published as a one-page section in the Annual Report and promoted to a full supplement the subsequent year. This 1994 Annual Report is generally seen as a landmark achievement in the field of IC. Since then Skandia has been publishing an IC supplement with each year and half-year report (Roos, Roos, Edvinsson and Dragonetti, 1998; Edvinsson and Malone, 1997).

6.2.2 Rationale

In order to illuminate the rationale behind the Skandia IC Navigator, it would be useful firstly investigate the combinatory approach that seems to characterise the tool. In subsequent steps, it would further be enlightening to discuss the metaphorical approach to illustrative format utilised for portraying the Skandia approach. Finally, it would be instructive to analyse the contention that IC would constitute a dept item on corporate balance sheets.

6.2.2.1 A combinatory approach

In order to meet marketplace and corporate needs, a combinatory approach has been chosen, which incorporates and systematically adapts elements of Sveiby's Intangible Asset Monitor (e.g. knowledge perspective) and Kaplan and Norton's Balanced Scorecard (e.g. format of

display, and an approach that considers both, IC and financial capital) to Skandia's corporate environment in the Navigator (Edvinsson and Malone, 1997; Sveiby, 1997; Kaplan and Norton, 1996; Roos and Roos, 1997). The adaptation process involved an explicit emphasis on IC within a broader managerial framework. Edvinsson and Malone have emphasised that IC is likely to dominate the valuation of companies since IC increasingly captures the dynamics of organisational sustainability and value creation. Hence their explicit focus on IC within a broader framework of an expanded organisational management system. To better illustrate the assumption underlying the explicit focus on IC it is worth quoting Edvinsson and Malone at some length:

> "[IC] alone recognises that a modern enterprise changes so fast that all it has left to depend on is the talents and dedication of its people and the quality of the tools they use. But most of all, Intellectual Capital is inevitable because it alone, of any model for measuring corporate performance pierces the surface and uncovers true value. In doing so, it restores both common sense and fairness to economics. Intellectual Capital is our future" (Edvinsson and Malone, 1997: 22).

The attention to a financial perspective in the Skandia IC Navigator can be illustrated as follows:

> "The financial statement is actually a subset of the larger IC report, capturing, as it were, one component of a much larger analysis of a company's worth" (Edvinsson and Malone, 1997: 75-76).

Thus, it must be appreciated that similarly to the Balanced Scorecard, the Skandia IC Navigator seems to be characterised by an approach that considers both, financial as well as non-financial assets. Both aspects are combined in a holistic managerial framework for action.

6.2.2.2 A tree metaphor

A constituent part of the rationale underlying the Skandia Navigator is a metaphor, in which a business organisation is compared to a living organism. This illustrative approach seems to become rather prominent in recent management literature, where metaphors are (re-) discovered as a methodological tool in management research and practice (e.g. Nonaka and Takeuchi, 1995; Lissack and Roos, 1999). Often analogies to living organisms are used as a

conceptual lens for viewing modern organisations (see, e.g. von Krogh and Roos, 1995; von Krogh and Vicari, 1993; von Kroght, Roos, and Slocum, 1994).

In the case of Skandia, in order to emphasise the importance of ICM and to illustrate the potential pitfalls of denying IC's pertinence to corporate success, a tree has been chosen as an epitome for a living organism. Edvinsson and Malone compare the trunk, branches, and leaves (i.e. the parts that are visible to the observer), to a business enterprise as it appears in the marketplace. The "visible parts" are typically described by traditional accounting processes, viz. organisational charts, annual reports, quarterly statements, company brochures, and other corporate documents. The fruits produced by the tree are also visible and can be interpreted as corresponding to products bought by consumers and profits sought by shareholders. It is argued, that "the smart investor scrutinises this trees in search of ripe fruit to harvest" (Edvinsson and Malone, 1997: 10).

The assumption that such visible parts would embody the entire tree is considered inappropriate for IC practice, argue Edvinsson and Malone. While a good flavour of the fruit and a healthy colour of the leaves might be indicators for the tree's current state of health, these symptoms would not have the potential to predict whether the tree will also be healthy in the future, explain the authors. As half of the mass or even more of the tree lies underground, an understanding of how the roots' influence affects the fruit would be essential (Edvinsson and Malone, 1997). The authors suggest that in an era of rapid technological change, characterised by short product life cycles, unexpected competitors, and new types of relationships, a company ought to constantly pre-empt, and adapt to, changes. Analogously to the tree metaphor, the ability to adapt seems to reside in the strength of its root system, i.e. its hidden values, which need to be nurtured appropriately in order to sustain competitive advantage. It is contended that this

> "is what makes Intellectual Capital – the study of the roots of a company's value, the measurement of the hidden dynamic factors that underlie the visible company of buildings and products – so valuable" (Edvinsson and Malone, 1997: 11).

The tree metaphor seems to reflect well the gist of the rationale, which the Skandia Navigator is built on. The authors believe that an adroit understanding of the hidden roots of a company (i.e. the invisible parts), the potential gains in nurturing them appropriately, and the potential

managerial dangers arising with ill-treating and neglecting them would constitute a valid starting point for constructing an IC measurement system.

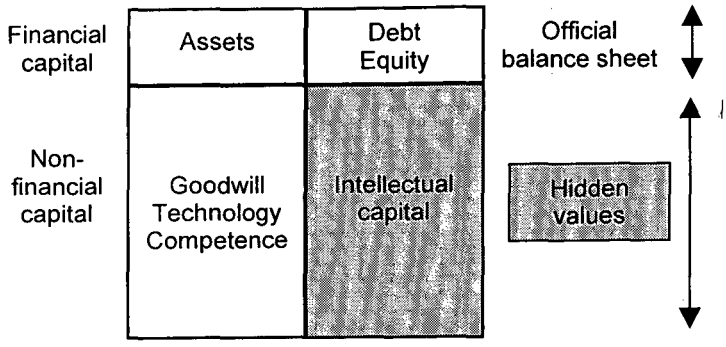
6.2.2.3 Intellectual capital as debt item on the balance sheet

It is important to observe that IC, in Edvinsson's treatment, is regarded as a debt item on corporate balance sheets. Before analysis can illuminate the rationale behind this conjecture, the reasons behind the construction of a balance sheet, which accords a more explicit recognition to IC need to be considered. According to Edvinsson and Malone, traditional balance sheets would, for several reasons be inadequate for capturing the increasingly large gap between corporate market and book value. Firstly, balance sheets are paraphrased as "snapshots" of the past that are often "skewed or aimed at the wrong subject" (Edvinsson and Malone, 1997: 9). Moreover, balance sheets do typically not account for "soft management issues" and the impact of such issues on corporate competitive dominance (for related arguments, see, e.g. von Krogh, Roos, and Hoerem, 1996; Romhardt, 1997, 1998; Sveiby, 1997). It is emphasised that traditional balance sheets typically do not

> "tell how much [organisational traditions and memories] are worth or set off alarms when, through management decisions or employee layoffs, they are lost. The result is often a kind of corporate Alzheimer's, whereby a company busy watching the bottom line loses its institutional memory, and thus itself, without ever noticing the loss" (Edvinsson and Malone, 1997: 9).

Likewise, a paradox of modern business investments is believed to reside in the fact that investments aiming at enhancing IC, i.e. those assets, which enable a company to stay competitive ultimately result in a depreciation of corporate book value. The chain of reasoning is that if a company invests for instance in human capital or information technology it is likely to be affected by a short-term deterioration of its profit and loss statement, which in turn reduces the value of the balance sheet (see, e.g. Edvinsson and Malone, 1997; Roos and Roos, 1997; Romhardt, 1998). In order to alleviate these inadequacies, it is aimed at depicting IC as a visible value in corporate balance sheets. The suggested balance sheet is illustrated in figure 6.1.

Figure 6.1: The expanded corporate balance sheet



Source: adapted from Edvinsson and Malone, 1997: 43; Edvinsson, 1997: 368.

Three fundamental insights into the rationale behind the Skandia Navigator as IC measurement tool can be gained from figure 6.1: firstly, IC is seen as a non-financial form of corporate capital; secondly, IC related information is supplementary rather than subordinate to traditional purely financial information; thirdly and most importantly, IC is regarded as debt and not as asset item (Edvinsson and Malone, 1997; Edvinsson, 1997). While the first two insights seem straightforward would follow naturally from IC theory as discussed in chapters 2 and 3 (see e.g. Sveiby, 1997, 1998a; Sullivan, 1998; Allee, 1999) the third proposition would require further explanation.

Edvinsson and Malone suggest that IC is best viewed as a debt item because it can be seen as an investment in the future. This is based on the principle that IC would typically be borrowed from stakeholders, for instance from customers or employees (Edvinsson, 1997: 367-368; Edvinsson and Malone, 1997: 43). It should be emphasised that this perception of IC contrasts with Sveiby's interpretation of IC as an asset item. Concerning the question of counterbalancing IC as a debt item, traditional accounting rules would suggest to counterbalance it with goodwill. Edvinsson and Malone proclaim that through this traditional lens goodwill is seen as "a trash item to be deducted as quickly as possible," because it ultimately reduces the value of the corporate balance sheet (Edvinsson and Malone, 1997: 44). Alternatively, Edvinsson suggests that "from a knowledge value viewpoint it could be considered to reflect the intellectual value, which grows over time" (Edvinsson, 1997: 368). Thus, an important aspect to remember is that IC in the Skandia framework represents a debt, rather than an asset on the corporate balance sheets.

To summarise the rationale underlying the Skandia IC Navigator, it should be appreciated that this ICM model seems to be characterised by a combinatory approach, which embraces insights from Sveiby's analysis, as well as Kaplan and Norton's. Similarly to Kaplan and Norton, financial as well as non-financial perspectives are accommodated. Within this broader framework, similarly to Sveiby, the component IC gets accorded explicit recognition. The authors use a tree metaphor to illustrate the rationale behind the Skandia IC Navigator. In this metaphor, an organisation is compared to the tree itself, whereas the roots are interpreted as IC. Finally, it should be borne in mind that in Skandia's approach, IC is viewed as a dept item on corporate balance sheets, because it is seen as borrowed from corporate stakeholders.

6.2.3 Purpose

Similarly to Sveiby, the purpose behind the development of the Skandia Navigator seems to have been triggered by the fallacy of current financial accounting systems to capture the true value of the modern enterprise, which according to Edvinsson and Malone lies in its IC. To alleviate this inadequacy, the goal was set

> "to identify those intangible factors off the balance sheet, *measure* them, and find a way to *present* them in a coherent way. The result was a model for *visualising* and *reporting* Intellectual Capital. It centred around a navigational tool that acted as an organiser for the different types of value-laden corporate investments, and that offered a more balanced and holistic perspective than traditional models" (Edvinsson and Malone, 1997: 209, emphases added).

This quotation seems to reflect the gist of the purpose of the Skandia Navigator as an ICM tool that would, in line with the Balanced Scorecard, be predominantly concerned with *measuring* corporate performance holistically. Edvinsson and Malone elaborate on the above and point out that the model targets both, valuation and navigation. According to the authors, valuation entails the determination of the constituent building blocks of IC (the underlying reduction approach is outlined in chapter 2). Navigation in turn corresponds to the process of highlighting the continuing processes of adding to a firm's long-term sustainability, and nurturing the organisation's roots for sustainable cash-flow generation. This clearly shows that IC measurement, in the sense of Edvinsson and Malone should ultimately be linked to financial performance (Edvinsson and Malone, 1997; Edvinsson, 1998b).

Another important point to be appreciated is that the Skandia Navigator is designed primarily for external reporting purposes, rather internal use. It is claimed that the Skandia "IC yardstick" can be applied to any organisation including organisations in the non-profit sector, which ultimately suggests a comparability of IC data not only across industries, but also across economic sectors (see Edvinsson, 1997: 368; Edvinsson and Malone, 1997: 162, 172).

In sum, at the heart of the purpose underlying the Skandia Navigator seems to reside the idea to construct a measurement tool that visualises and accounts for IC and financial capital to external corporate stakeholders. Thus, in line with Sveiby, the focus is put on measuring, rather than managing IC. It must also be remembered from chapter 4 that ICM tools seem to have potential for internal as well as external purposes. To this extent, it is interesting to note that the Skandia IC Navigator is explicitly restricted to external usage. With this understanding, the approach and tool can be investigated.

6.3 Approach and tool

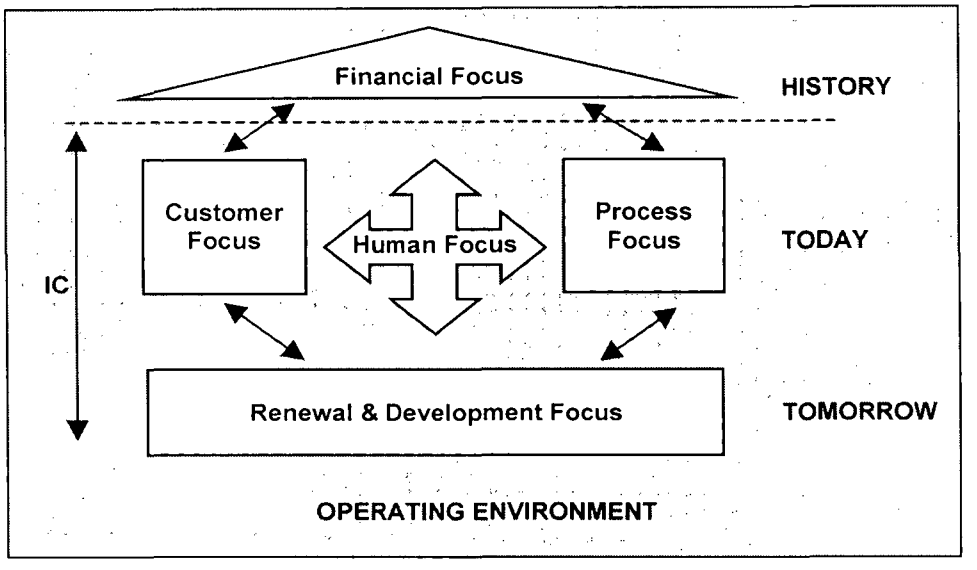
The present section aims at re-enacting the approach of the Skandia Navigator as an ICM model. It should be kept in mind, that since this tool has specifically been developed by the Swedish insurance company Skandia, the present section can also be read as a case study of Skandia. In particular, it should be emphasised that the general applicability of this ICM tool to corporate environments other than the service industry in general and the insurance business in particular should not be accepted at face value. For expository purposes, the analysis of the Skandia Navigator shall be presented in the following steps: firstly, the general approach utilised in building the tool is analysed. This is ensued by a discussion of each of the four constituent parts and the indicators used to measure them. Thirdly, Skandia's approach to consolidate these measures into one generic IC index is illustrated. The chapter concludes with a critical analysis of the most salient areas of investigation.

6.3.1 The format of display utilised and the derivation of indicators

The format of display that has been chosen for the Skandia Navigator architecturally resembles a house. Analogously to the tree metaphor, this format of display seems to have been adopted in order to provide a straightforward approach to communicate the meaning of its components, i.e. how financial data is balanced with non-financial information, the present

with the past and the future, how the different components work together, and what role they play in the organisation's activities (see figure 6.2).

Figure 6.2: The Skandia intellectual capital Navigator



Sources: Edvinsson and Malone, 1997: 68.

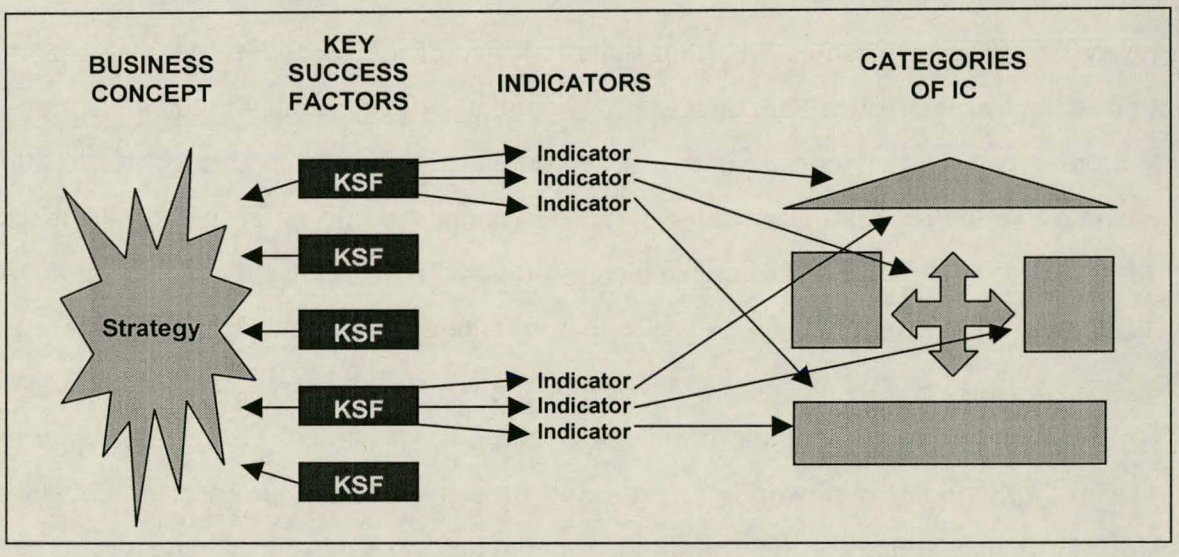
Starting at the top, the triangle (the "attic"), represents the financial focus, which would essentially involve the traditional balance sheet and is intended to offer an overview of past information and precise measures of where the company was at a specific moment in the past. Hence the "history" tag (Edvinsson and Malone, 1997: 68). The walls of the house are meant to symbolise the present activities including foci on customers and processes. The foundation is supposed to gear the enterprise towards the future and thus revolves around renewal and development issues. Finally, the human focus is equated with the soul of the house, hence its central position in figure 6.2.

It should be noted that, in Edvinsson and Malone's analysis, the constituent parts of the metaphorical house represent areas of focus rather than forms of capital. This can be rather confusing, since the areas of focus are terminologically congruent with the Skandia approach to the anatomy of IC as presented in chapter 2. The terminological incongruencies become even more confusing, if one considers figure 6.3, where the alleged "focus areas" are again referred to as "categories of IC." As the authors themselves do not comment further on the inherent incongruencies, the present analysis shall not be concerned with their clarification,

either. In the present chapter, therefore, and in line with the practice by the authors themselves, "focus area" and "forms of intellectual capital" shall be used interchangeably. More important for the purpose of the study would be to illuminate the process of developing indicators for the respective IC categories.

In order to create sustainable value, IC indicators would need to reflect the corporate vision and strategy, explain the authors. To this end, Edvinsson and Malone, similarly to Kaplan and Norton (1992, 1996a), suggest an approach where corporate vision and strategy is translated into key success factors from which concrete indicators are derived. These indicators are then allocated to the five focus areas. Figure 6.3 illustrates the suggested process that translates corporate strategy into the IC Navigator.

Figure 6.3: The intellectual capital process model



Source: adapted from Roos, Roos, Edvinsson, and Dragonetti, 1998: 63.

Edvinsson and Malone define three important tasks, which an effective IC Navigator ought to fulfil, viz. firstly, to "look down into the measurement," secondly to "look upward toward more sweeping measures of value," and thirdly to look "outward toward the user" (Edvinsson and Malone, 1997: 70). With "looking down into the measurement" it is meant that an organisational tool should act as a guide, hence the name Navigator. The right body of measurement should be chosen, categorised according to the IC building blocks, and linked to a coherent system into a cohesive whole. It is posited that a Navigator should indicate position, direction, and velocity, in other words, it should be connected to corporate strategy.

"Looking upward toward more sweeping measures of value" is meant to suggest that a good Navigator has to ultimately combine all of the categorical data into selected "metaindices" which communicate the crux of a company's strengths. It is important to remember that these are explicitly designed for external comparison. The third task, "looking outward toward the user" refers essentially to comprehensibility and inclusiveness as fundamental aspects to be met by a navigation tool.

To summarise this far, an attempt has been made to illuminate the approach of Skandia's IC Navigator as a tool designed specifically for a service company. To this end, the format of display has been analysed. In a subsequent step, the derivation process of indicators has been discussed. Attention shall now shift to a critical analysis of the metaphorical house to bottom.

6.3.2 The financial focus area

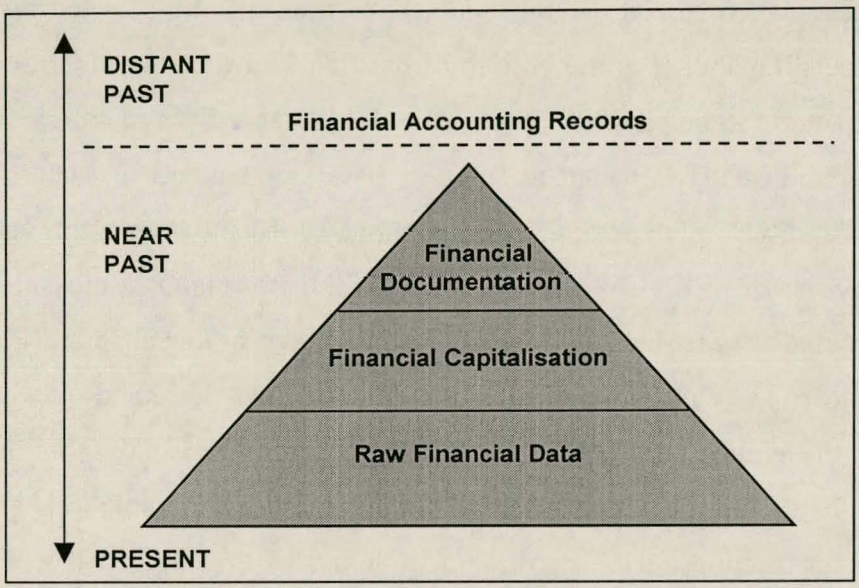
Similarly to the previous framework, the Balanced Scorecard, Skandia accords explicit recognition to the linkage of financial data to IC. The linkage of financials to intangible assets revolves around two cornerstones. Firstly, it is contended that the value of IC has to ultimately be converted into monetary value because financials usually offer the best feedback system for testing the IC foci. For example, changes in the IC indices customer satisfaction, or employee morale should ultimately be reflected in changes in monetary measures e.g. revenues, or overhead costs. If this is not the case, argue Edvinsson and Malone, the respective IC indicator would be inappropriate and should be discarded. Thus, it is crucial to realise that in the Skandia framework, convertibility of a given intangible asset in monetary values is seen as a benchmark for the usefulness of the indicator of this particular asset.

The second cornerstone for linking financials to intangible assets is, according to Edvinsson and Malone, that they should by means of trial and error change organically over time to better fit other foci. A "free circulation of continuous upwelling of new indices and sinking of archaic ones within the structure of financial capital" (Edvinsson and Malone, 1997: 77) is advocated. These conjectures apparently the authors to the development of a taxonomy of financials, comprising three components along a time-scale from near to distant past.

6.3.2.1 *A taxonomy of financials*

To illustrate the taxonomy of financials, the attic of the metaphorical house has been split into three constituent parts, viz. raw financial data, financial capitalisation, and financial documentation (figure 6.4). Each of these three parts is designed to contribute to linking financials to IC, through systematically translating IC into monetary value.

Figure 6.4: Skandia's financial focus triangle



Source: adapted from Edvinsson and Malone, 1997: 78.

The designation "raw financial data" for the bottom of the financial focus triangle describes a situation "close to chaos" (Edvinsson and Malone, 1997: 79). The term chaos is meant to refer to subjective, non-empirical, and undifferentiated data traditionally captured, if at all, in footnotes and annotations to corporate financial documents such as annual reports or performance evaluations. Examples would include, but may not be restricted to, rumours, reports from salespeople, and patent attorneys. Such raw financial data has typically not yet been refined to the point where it can be measured. It is argued that while some parts of this information might be useless, others might be very valuable. The transformation of such raw data into measurable indices starts with the selection of relevant components.

> "The only solution is to find those measures that will hack through this information undergrowth, find the promising sites, then filter out the worthless gravel and sand to leave the gold nuggets we are searching for" (Edvinsson and Malone, 1997: 79).

The suggested selective filtering solution aiming at finding the "gold nuggets" within the abundance of financial data would generally appear to be a logical process designed to arrive at potential sources of future value creation. It should furthermore be welcomed that, in this manner, very recent operational data can be given consideration, which is typically overlooked in traditional accounting systems (see, e.g. Klavans, 1994; Drucker, 1995; Eccles, 1991; Johanson, 1996).

The goal of the second process, i.e. financial capitalisation, is to translate the selected raw financial data ("the gold nuggets") gathered at the bottom of the financial focus triangle into concrete measures. These data ought to be contracted into an initial list of indices of sufficient precision and scope. This contracted list is meant to serve as baseline standard that can be capitalised on and amended with time and experience. For example, the Skandia team through scrutinising the financial activities of its divisions has generalised a list of eighteen measures from this report. This list is included in table 6.1, which is presented later in this chapter. (For expository purposes, and in order to avoid redundancies, this table is only presented once in this chapter, although frequent reference will be made to it in the course of the analysis in the remainder of this chapter.) It should be emphasised that the measures in table 6.1 are suggested as guidelines for constructing an IC report, and it should be appreciated that the measures are not prescriptive.

The third process is exemplified by the apex of the financial focus triangle. This apex stands for financial documentation of the measures delineated in the previous process by means of traditional financial tables. It represents the final transformation and manifestation of IC assets into cash value. In this context, Edvinsson and Malone ponder the question of whether selected indicators generated in the two previous processes are likely to be considered so critical that they might become "a permanent addition to the traditional accounting documents" (Edvinsson and Malone, 1997: 86).

To summarise, it should be stressed that, similarly to Kaplan and Norton's approach, the Skandia model seems to be characterised by an explicit linkage of financial to non-financial data. The Skandia model, however, would transcend the Balanced Scorecard approach in that the financial dimension is further systematised and a taxonomy of financials is developed.

6.3.3 The customer focus area

Moving down the metaphorical house from "the stuffy attic to the living part" (Edvinsson and Malone, 1997: 88) leads to the two walls, i.e. the customer and process foci. The present section is concerned with the customer focus area and the subsequent one with the process focus area. The analysis of the customer focus area is divided into two steps. The first is concerned with an important factor for this area, viz. customer satisfaction and the second section aims at illustrating the approach to measure the customer focus area.

6.3.3.1 Customer satisfaction

Customer satisfaction forms an integral part of the Skandia framework. With regard to the customer focus area, Edvinsson and Malone, in line with a large number of observes (Vavra, 1992; Christopher, Payne, and Ballantyne, 1991; Buttle, 1996; Gordon, 1998) subscribe to management theories such as the establishment of enduring relationships with their customers, total customer service, and the collaboration with customers on joint value creation (Edvinsson and Malone, 1997: 89). The ultimate aim of these management theories tends to be the delineation of ways to ensure the satisfaction of corporate customers. Analysis of the customer focus area has obviated that at Skandia "customer satisfaction" is the primary objective within this focus (Edvinsson and Malone, 1997). Edvinsson and Malone give several reasons why it is paramount for a company to keep its customers satisfied, of which the two most important are outlined below.

Firstly, a company ought to realise that customer expectations have changed over time. Unlike in the 1960s, modern customers expect individualism in products and want to personally define the purchased product or service to match their needs. As a result corporate capabilities such as empathy or the anticipation of future customer demands would constitute an essential task. While the authors do not recommend specific frameworks for the anticipation of customer needs, it should be noted that the application of Hamel and Prahalad's (1994) concept of industry foresight seems to lend itself particularly well for this purpose.

Secondly and more importantly, Edvinsson and Malone argue that new types of relationships with corporate stakeholders force new organisational forms into being. The "virtual corporation" in the sense of Davidow and Malone (1994) is seen as epitome of a modern company, which would typically be characterised by a combination of high technology and

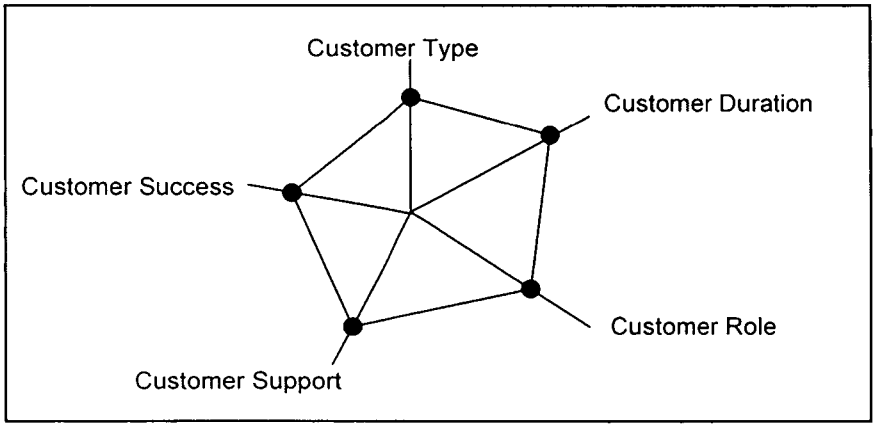
well-trained, adaptive workers to modify its form according to need. Enduring relationships with customers, based on mutual benefit for both parties involved, would appear essential for virtual corporations to build and sustain competitive advantage (Edvinsson and Malone, 1997; Davidow and Malone, 1994). Relationship marketing with corporate customers has in the recent years become an area of scholarly interest (see e.g. Blois, 1996; Chirstopher, Payne, and Balantyne, 1991) and the issue of its applicability to a variety of business sectors including the service sector has been addressed in a proliferate number of publications (see, e.g. Lovell, 1997; McCourt, 1997; Buttle, 1996), and even to the non-profit environment (see, e.g. Olson and Slater, 1997; Lovelock and Weinberg, 1984; Kotler and Andreasen, 1996). In this view, the Skandia approach to build customer relationships in order to enhance customer satisfaction appears to be well founded in related empirical and conceptual contributions.

From the above would follow that customer satisfaction is considered a critical factor for the customer focus area. This should be kept in mind during the next step of the analysis, which is concerned with the selection of measures for this focus.

6.3.3.2 Measures for the customer focus area

In order to account for the customer focus area, Skandia relies on a list of twenty indicators. A proposed standardised list of customer related indicators is incorporated in table 6.1. In the future, however, Skandia aims at introducing the "Customer Attraction Index" composed of five basic measurements, viz. customer type, customer duration, customer role, customer support, and customer success (figure 6.5).

Figure 6.5: Measures for the customer attraction index



Source: adapted from Edvinsson and Malone, 1997: 96.

These five measurements, according to Edvinsson and Malone (1997), cumulatively capture the flow of relationships with current and potential customers. The single "Customer Attraction Index" is attained by multiplication of the five basic measurements. It is unclear why none of the five basic measurements accounts for customer satisfaction, when the importance of this aspect has been explicitly emphasised Edvinsson and Malone (1997: 89).

To summarise the customer focus area, the primary emphasis is put on the satisfaction of customers. Interestingly, however, analysis revealed that in delineating measures for the customer focus area, no explicit attention was accorded to the development of indicators for this important area. It should also be noted that unlike Sveiby, no attention seems to be given to the measurement of intangible revenues provided by corporate customers. Thus, a focus would be given to the delineation of how well customers are served, apparently at the expense of a consideration of critical inputs from the side of these customers. It should be remembered, however, that such customer inputs can constitute an important source of organisational value creation (Sveiby, 1997: 118). It should also be realised that to the extent that the customer focus area, in line with the Balanced Scorecard, can be seen as the only concern for the IC building block external capital, important additional constituents as they emerged from chapter 2 could be neglected.

6.3.4 The process focus area

The process focus area assumes the same position in the IC house as the customer focus, i.e. that of a supporting wall. The purpose of this focus is to find measures that reveal how well technology as supporting tool improves overall corporate efficiency and value creation. On the evidence of fast moving industry structures (Rheingold, 1993; Savage, 1995) and emerging forms of organisations commonly referred to as hypertextual (Nonaka and Takeuchi, 1995), learning (Senge, 1991), or virtual (Davidow and Malone, 1992), Skandia's conclusion that investments in technology constitute a sound basis for building and sustaining corporate competitive dominance seems to reside on a sound fundament. The authors believe that an enhanced IC value surfacing in benefits such as organisational flexibility, the capability to quickly adapt to the constantly changing marketplace, and the swift development of new products are largely attributable to a rigorous exploitation of technology (Edvinson and Malone, 1997).

Notwithstanding the recognition that a sound strategy to invest in and reasonable way to exploit technology might enhance a company's IC value, companies should be guarded against myopic technology investment and application (see, e.g. Zuboff, 1988 for a critical view on the introduction of information technology in corporate environments). Edvinsson and Malone alert their readers to four situations in which the costs of technology usage exceed its benefits, viz., firstly, the application of wrong technology; secondly, the purchase from the wrong vendor; thirdly, the wrong application of technology; and finally, the wrong philosophy in implementing technology. Since such situations potentially result in a depreciation of IC, it is considered beneficial for the purpose of the study to glance at them briefly.

6.3.4.1 Situations where technology can lead to a depreciation of intellectual capital

Firstly, the application of wrong technology could lead to a depreciation of IC, because of an inherent trade-off relationship. One the one hand, the early adoption of a new invention can quickly lead to a decisive competitive advantage. On the other hand, the newly applied technology might become a commodity and companies pioneering in its application could soon been overtaken by competitors which have been more reluctant in adopting new technology (Edvinsson and Malone, 1997).

A second situation where information technology costs could exceed IC benefits would be a purchase from the wrong vendor. The "wrong" vendor, in the sense of the authors, would be one that is likely to be swiftly outperformed and disappear from the marketplace. Purchasing companies, it is reasoned, could get "stuck with processing equipment that is expensive, incompatible, and needless to say, obsolete" (Edvinsson and Malone, 1997: 104).

The third situation is characterised by the wrong application of technology. Technology, would be wrongly applied if it has been acquired for the wrong reason. For example, computers might be bought that nobody uses, or high-tech equipment is installed without prior identification of a need to serve (Edvinsson and Malone, 1997). It is interesting to note that companies typically classify such investments as assets rather than liabilities in their (traditional) balance sheets without recognising their detrimental effects on corporate performance through lowered IC value and, as a result a shrinking market value.

Finally, the wrong philosophy in implementing technology could lead to a depreciation of IC, e.g. a situation in which organisations radically introduce automation technologies, not readily fitting to the given corporate structure (Edvinsson and Malone, 1997). This general rejection of "radical" in favour of more incremental approaches to implement technology would need to be qualified slightly, because it need not necessarily be viewed as beneficial to corporate IC. A company might for instance, in occasions where strategic intent (Hamel and Prahalad, 1989, 1993) clashes with current business operations be required to "radically" transform itself (Johnson, 1994, 1988; Miller, 1990; Burgelmann, Maidique, and Wheelwright, 1996) wherefore a radical way of implementing technology could be beneficial.

6.3.4.2 Measures for the process focus area

In view of the predominant emphasis within the process focus area on information technology, measures should predominantly reflect how well an enterprise uses its technology tools to create value. A standardised list of indicators for the process focus, the second supporting wall of the IC Navigator, is included in table 6.1. It should be emphasised that at Skandia, the development of such measures is seen as an inherently company-specific process, and no prescriptions are made as to their generation. Thus, the list in table 6.1 is intended as a general guideline, and companies can set their individual foci, or adapt and expand the list as considered appropriate.

In summary, the process focus area in the Skandia IC Navigator seems to revolve around the appropriate usage of information technology. It is unclear, why Edvinnson and Malone, while drawing on the Balanced Scorecard, do not incorporate the relatively sophisticated insights concerning the process focus area as developed by Kaplan and Norton (see the generic value-chain model of the internal-business-process perspective in figure 5.4). The view on the process focus area as presented by Kaplan and Norton would be more encompassing than the singular focus on the appropriate utilisation of technology as in the Skandia framework.

6.3.5 The renewal and development focus area

The fundament of the IC house as indicated in figure 6.1 is designed to capture the opportunities that define a company's future. Hence, its indicators lie exactly at the opposite end of a spectrum ranging from past to future and where financials attempt to document the

immediate past performance of the organisation (i.e. the "attic"). The renewal and development focus aims at anticipating the immediate future by establishing what the company is doing currently, in order to best prepare itself to grasp future opportunities (Edvinsson and Malone, 1997).

This focus area appears to have received relatively little attention in the Skandia Framework, which seems unfortunate, bearing in mind that the model, with its IC focus, should be devote adequate attention to the development of "dynamic capabilities" (Teece, Pisano, and Shuen, 1997), the management of the "opportunity gap" (Prahalad, Fahey, and Randall, 1994) for instance through the creation of new competitive space (Hamel and Prahalad, 1993), the renewal of "core competencies (Prahalad and Hamel, 1990), and in particular through guarding core competenices from becoming "core rigidities" (Leonard-Barton, 1992, 1995).

The approach at Skandia to actively promote renewal and development has been the identification of six perspectives according to which indicators can be grouped, viz. customers, attractiveness on the market, products and services, strategic partners, infrastructure, and employees. A list of indicators is, analogously to the foregoing parts of the IC house, included in table 6.1. This list would reflect Skandia's approach to derive measures in a responsive way to perceived trends and discontinuities inherent in the strategic perspectives (Edvinsson and Malone, 1997: 182). As with the foregoing areas, the indicators of the renewal and development focus area are by no means prescriptive, and should be seen as mere suggestions.

6.3.6 The human focus area

It should be emphasised that in Edvinsson and Malone's treatment, only the human focus area interacts with the other foci. It is believed at Skandia that the power of the human dimension to connect the different IC foci is crucial for the enhancement of the overall corporate IC value. In other words, the success of other value creating activities depends to a large extent on the corporate workforce with its inherent culture, norms, values, and standard of training. Edvinsson and Malone infer that "an enterprise without values has no value" and that it is thus essential to "capture humanity" (Edvinsson and Malone, 1997: 123). The starting point for Skandia in measuring human capital would be to categorise the corporate workforce.

6.3.6.1 *Employee categories*

Unlike the traditional employment population centralised in corporate buildings and sharing a common philosophy, lifestyle, and community the workforce of today's virtual organisations (Davidow and Malone, 1992) tends to be characterised by a coexistence of numerous subpopulations. According to Edvinsson and Malone the number of these sub-populations, which often differ in behaviour and rules increases constantly. A current list developed for Skandia includes "office goers" regularly driving to work and thus bound to live near the office contrasted by "telecommuters" who typically conduct their job isolated from the office. Salespeople are referred to as "road warriors" because of their tendency to pursue work independently from any location and keep the contact to the office mainly via electronic aid. Finally, the term "corporate gypsies" is applied for workers who are not exclusively associated with a single company and work for instance as contractors or consultants (Edvinsson and Malone, 1997). As these categories imply, the Skandia approach considers white collar workers, only. This focus seems understandable, bearing in mind that Skandia is a service company where the corporate workforce is often exclusively composed of white collar workers. At the same time, however, and this is noteworthy, such explicit focus could limit the applicability of the IC Navigator to service companies.

6.3.6.2 *Measures for the human focus area*

After the categorisation of the corporate workforce, measures for the human focus area would have to be developed. The Skandia practitioners contend that indices derived from the identified categories ought to comply with three criteria. Firstly, they should be "well-reasoned," i.e. relevant to IC value creation, secondly, "well-designed," i.e. objectively chosen, and thirdly, "teleological," i.e. selected as to reflecting a company's present as well as its future (Edvinsson and Malone, 1997: 124). Edvinsson and Malone foresee an increasing interest in the measurement of corporate human capital and substantiate their opinion with the example that research on how to best measure human capital has already been conducted by OECD researches (Miller and Wurzburg, 1995). Table 6.1 summarises some of the suggested measures.

In summary, it is noteworthy that the final area of focus, viz. the human focus would be the only dimension of the Skandia Navigator, which interacts with all other foci. It should be born in mind that within this area of focus, attention is exclusively devoted to white collar workers.

It should be welcomed however that the Skandia IC Navigator, in line with the Intangible Asset Monitor, but unlike the Balanced Scorecard, does not "lump together" (Bontis, Dragonetti, Jacobsen, Roos, 1999: 397) human capital with IT systems, but accords specific attention to this important dimension of corporate IC. After the five dimensions of the Skandia Navigator have been discussed, analysis can now shift to the Skandia approach in calculating an IC index that embraces all five focus areas.

6.3.7 Calculating the intellectual capital index

So far, the Skandia Navigator seems structurally similar to the two previously discussed approaches, viz. Sveiby's Intangible Asset Monitor, and Kaplan and Norton's Balanced Scorecard. In essence, all three approaches, whether explicitly or implicitly, split corporate IC into several components, which are then translated into a set of indicators. Sveiby as well as Kaplan and Norton seem to stop at this stage. The Skandia practitioners, however, go one step further arguing that what was discussed in the forgoing pages of this chapter only constitutes the basis for the final, and most important step, viz. the determination of the IC index.

The importance of such a single IC index becomes obvious, if one considers the debate concerning its inception. The Skandia approach to contract the variety of measures into a single index is derived from the registered trademark "IC-Index" of the London based consultancy organisation "Intellectual Capital Services", allegedly the pioneer in the development and application of consolidated measures for IC. It is, predicted upon the author's understanding the most detailed approach publicly available. The analysis shall now investigate this last and fundamental step that draws together all five areas of focus of the metaphorical house into a single IC index that consists partly of IC valued in dollars, and partly of IC expressed as coefficient. More formally,

Organisational Intellectual Capital = iC

"C" is referred to as value of IC in dollars, whereas "i" denotes an organisation's "coefficient of efficiency" in using that IC (Edvinsson and Malone, 1997: 179). The re-enactment of how these measures are suggested to compute shall be conducted in three steps. A standard IC report of a hypothetical firm constitutes the starting point of the analysis, from which in a

second and third step "IC absolute measure indicators (C)," and "IC coefficient of efficiency indices (i)" are generated (Edvinsson and Malone, 1997: 184-186).

6.3.7.1 The standard intellectual capital report

It has been customary in this chapter to refer to a standard list of IC indices at each focus area of the IC Navigator. In order to avoid redundancies, this list is only presented once in this chapter. Table 6.1 illustrates this list, which has been generated at Skandia in an attempt to structure a universal IC report. It should be mentioned again that this list of indicators is by no means prescriptive, but solely designed as an impetus to stimulate further thinking.

Table 6.1: The standard intellectual capital report

FINANCIAL FOCUS	CUSTOMER FOCUS
1. Total assets ($)	1. Market share (%)
2. Total assets/employee($)	2. Number of customers (#)
3. Revenues/total assets (%)	3. Annual sales/customers
4. Profits/total assets ($)	4. Customer lost (#)
5. Revenues resulting from new business operations ($)	5. Average duration of customer relationship (#)
6. Profits resulting from new business operations ($)	6. Average customer size ($)
7. Revenue/employee ($)	7. Customer rating (%)
8. Customer time/employee attendance (%)	8. Customer visits to the company (#)
9. Profits/employee ($)	9. Days spent visiting customers (#)
10. Lost business revenues compared to market average (%)	10. Customers/employees ($)
11. Revenues from new customers/total revenues (%)	11. Field salespeople (#)
12. Market value ($)	12. Field sales management (#)
13. Return on net asset value (%)	13. Average time form customer contact to salespeople (#)
14. Return on net assets resulting form new business operations ($)	14. Ration of sales contacts to sales closed (%)
15. Value added/employee ($)	15. Satisfied Customer Index (%)
16. Value added/IT employee ($)	16. IT investment/salesperson ($)
17. Investments in IT ($)	17. IT investment/service and support employee ($)
18. Value added/customers ($)	18. Service expense/customer ($)
	19. Service expense/customer/year ($)
	20. Service expense/customer/contact ($)

RENEWAL AND DEVELOPMENT FOCUS	
1. Competence development expense/employee ($)	17. Average customer duration with company in months (#)
2. Satisfied Employee Index (#)	18. Educational investment/customer ($)
3. Marketing expense/customer ($)	19. Direct communications to customer/year (#)
4. Share of training hours (%)	20. Non-product-related expense/customer/year (#)
5. Share of development hours (%)	21. New markets development investment ($)
6. Opportunity share (%)	22. Structural capital development investment ($)
7. R&D expense/administrative expense (%)	23. Value of EDI system ($)
8. Training expense/employee ($)	24. Upgrades to EDI system ($)
9. Training expense/administrative personnel (%)	25. Capacity of EDI system (#)
10. Business development expense/administrative expense (%)	26. Ratio of new products (less than tow years) to full company product family (%)
11. Share of employees below age 40 (%)	27. R&D investment in basic research (%)
12. IT development expense/IT expense (%)	28. R&D investment in product design (%)
13. IT expense on training/IT expense (%)	29. R&D investment in applications (%)
14. R&D resources/total resources (%)	30. Investment in new product support and training ($)
15. Customer opportunity base captured (#)	31. Average age of company patents (#)
16. Average customer age (#) education (#) income (#)	32. Patents pending (#)

Table 6.1: The standard IC report (continued)

HUMAN FOCUS	PROCESS FOCUS
1. Leadership Index (%)	1. Administrative expense/total revenues (#)
2. Motivation Index (%)	2. Cost for administrative error/management revenues (%)
3. Empowerment Index (#)	3. Processing time, outpayments (#)
4. Number of employees (#)	4. Contracts filed without error (#)
5. Employee turnover (%)	5. Function points/employee-month (#)
6. Average years of service with company (#)	6. PCs/employee (#)
7. Number of managers (#)	7. Laptops/employee (#)
8. Number of woman managers (#)	8. Administrative expense/employee ($)
9. Average age of employees (#)	9. IT expense/employee ($)
10. Time in training (days/year) (#)	10. IT expense/administrative expense (%)
11. IT-literacy of staff (#)	11. Administrative expense/gross premium (%)
12. Number of full-time /permanent employees (#)	12. IT capacity (#)
13. Average age of full-time/permanent employees (#)	13. Change in IT inventory ($)
14. Average years with company of full-time permanent employees (#)	14. Corporate quality goal (#)
15. Annual turnover of full-time permanent employees (#)	15. Corporate performance/quality goal (%)
16. Per capita annual cost of training, communication, and support programmes ($)	16. Discontinued IT inventory/IT inventory (%)
17. Full-time/permanent employees who spend less than 50 percent of work hours at corporate facility (#)	17. Orphan IT inventory/IT inventory (%0
18. Number of full-time temporary employees (#)	18. IT capacity/employee (#)
19. Per capital annual cost of training and support programmes for full-time temporary employees ($)	19. IT performance/employee (#)
20. Part-time employees/non-full-time contractors (#)	
21. Average duration of contract (#)	
22. Company manager with advanced degrees (%)	

Source: adapted from Edvinsson and Malone, 1997: 179-183.

For the purpose of calculating the IC index the comprehensive list above containing three different types of measurements, viz. direct counts (#), dollar amounts ($), and percentages (%), would have to be streamlined. The starting point for calculating the IC index with its two constituents, "i," and "C," are the direct counts. Direct counts constitute raw data, which should by means of comparison be further processed into percentages or directly translated into monetary values. Thus, two types of measurements remain to be streamlined, viz. dollar amounts and percentages. According to Edvinsson and Malone, all indicators expressed in monetary value are used to calculate the IC value "C." In a similar vein, the percentages ought to be contracted into "i," the coefficient of IC, indicating an organisation's velocity, position, and direction (Edvinsson and Malone, 1997).

6.3.7.2 Measuring the intellectual capital value (C)

In determining "C," a decisive question to be considered would be which, and how indicators should be selected in order to achieve a realistic and comparable figure. In pursuing this approach, the indicators expressed as ratios (e.g. educational investment/customer) are suggested to be further processed by multiplying out the denominators. Subsequently, redundancies ought to be removed. This leads to the contracted list depicted in table 6.2. The

authors emphasise the importance of adequate consideration of the five focus areas in contracting the list of indicators. It is unclear, however, why the authors then choose a template that uses headings in the contracted list in table 6.2 that are different from those in table 6.1.

Table 6.2: Intellectual capital absolute measure (C) indicators

New business development
1. Revenues resulting from new business operations/program/services
2. New markets/customer/client/curriculum development investment
3. Industry development investment
4. New channel development investment

IT investment
5. IT investment in sales, service and support
6. T investment in administration
7. Change in IT inventory

Customer development
8. Customer (client) support investment
9. Customer (client) serviced investment
10. Customer (client) training investment
11. Non-product-related customer expense

Employee development
12. Employee competence development investment
13. Employee new product support and training investment
14. Education unique to non-company-based employees
15. Training and support programs unique to full-time permanent employees
16. Training and support programs unique to full-time temporary employees
17. Training and support programs to part-time temporary employees

Partnerships
18. Partnerships/joint venture development investment
19. Upgrades to EDI or electronic networking system

Branding and intellectual property
20. Brand (logo/name) identification investment
21. New patent, copyright investment

Source: adapted from Edvinsson and Malone, 1997: 184-185.

In line with the purpose of the Skandia IC Navigator, Edvinsson and Malone explain that in measuring "C," an approach was chosen, which primarily emphasises future earning capabilities, in order to best meet investor interests. This also seems to be in line with the general rationale of IC that past performance (as captured in traditional corporate balance sheets) should be balanced with anticipated future earnings (Roos, Roos, Edvinsson, and Dragonetti, 1998; Stewart, 1998; Brooking, 1996; Kaplan and Norton, 1996a).

6.3.7.3 Measuring intellectual capital efficiency (i)

The current IC value is captured by the coefficient of efficiency "i," which tests the future investments (which are captured by "C") against corporate productivity, value creation, and user evaluation. In this manner, a company's commitment to the future would be balanced with operating measures of the present (Edvinsson and Malone, 1997). After the monetary indicators (indicators, which are expressed using $ signs) of table 6.1 have been contracted to table 6.2, a list of indicators expressed in percentages and ratios remains. Parallel to the

streamlining process of the IC value "C," in calculating the coefficient of efficiency from this list, all five areas of focus of the IC Navigator should be adequately considered. According to Edvinsson and Malone, it is important that, in order to accurately reflect how effectively the organisation is currently using its IC, each indicator increases in value the better the company performs (Edvinsson and Malone, 1997). The suggested indicators obtained from the standard list as presented in table 6.1 are summarised in Table 6.3. At the risk of repetition, attention should again be drawn to the fact that Edvinsson and Malone stress that the suggested lists in table 6.2 and table 6.3 are by no means exhaustive nor prescriptive, but rather designed to incite debates as to what constitutes future IC value and current IC performance.

Table 6.3: Intellectual capital coefficient of efficiency (i) indices

1.	Market share
2.	Satisfied Customer Index
3.	Leadership Index
4.	Motivation Index
5.	Index of R&D resources/total resources
6.	Index of training hours
7.	Performance/quality goal
8.	Employee retention
9.	Administrative efficiency/revenues (reciprocal of administrative error/revenues)

Source: adapted from Edvinsson and Malone, 1997: 186-187.

For the purpose of this study, it would be beneficial to briefly pause here in order to consider an interesting point. Scrutiny of tables 6.1, and 6.3 reveals an inconsistency in the authors' flow of argumentation concerning the customer dimension. First, to recall from the customer focus area in this chapter, the authors emphasise strongly the importance of satisfying customers (see Edvinsson and Malone, 1997: 89), then, however, a customer *attraction* index is introduced (see Edvinsson and Malone, 1997: 95). This could be confusing because the reader would expect a customer satisfaction index in recognition of the alleged importance of customer satisfaction. Thirdly, and even more confusingly, in table 6.3, the authors eventually use a customer *satisfaction* index. Notwithstanding this terminological vagueness, the calculation of the coefficient of efficiency ("i") is rather straightforward. In order to calculate "i," the proposition is made to combine all nine measures of table 6.3 into a single index reflecting how a company is currently using its IC.

This single index has been expressed by means of an equation:

$$i = (n/x)$$

The sum of the decimal values for the nine efficiency indices is equalled by (n), whereas (x) refers to the absolute number of these indices and thus determines their average. Only if a company operates exceptionally well, a coefficient greater than 1 can be achieved.

To summarise, the Skandia approach goes one step further than the Intangible Asset Monitor and Balanced Scorecard approach in that a single IC index is calculated. This index is calculated by multiplication of its two constituent parts, viz. the intellectual capital value (C) and the coefficient of efficiency (i). The IC index is meant to represent the overall value of a company's IC for external reporting purposes and encompasses all five areas of focus of the metaphorical house. It should be remembered, however, that the indicators, which serve to calculate this index do not seem to be sufficiently standardised yet. This would be an important observation in view of the purpose of the Skandia Navigator to serve as a tool for external reporting.

6.4 A critique of the Skandia intellectual capital Navigator

A critique of the Skandia Navigator would need to investigate at least six areas. Firstly, and maybe most importantly, a lack of attention in the Skandia framework to the flows between individual IC categories deserves attention. This could be investigated against the background of a general lack of attention to the interaction among individual perspectives in the model. Thirdly, it should be evaluated whether IC can be seen as a debt or an asset item on corporate balance sheets. Fourthly, the inadequate treatment of the external focus area should be critisised. Another area that deserves consideration is the human focus. Last but not least, the usefulness of the IC index should be examined.

6.4.1 Negligence of intellectual capital flows

An important aspect, which is not incorporated in the Skandia approach to ICM seems to be an appropriate consideration of the flows between different categories of IC. Accounting for these flows, however, would be an important requirement for ICM models (Roos and Roos,

1997: 419). For example, ICM models would need to capture how, in the process of translating human capital into structural capital, the latter would increase in value, whereas the former would decrease. This would suggest that the Skandia Navigator, similarly to Sveiby's model, could be "static" in that it would focus exclusively on capturing stocks of IC. An exclusive focus on stocks seems to neglect flows of IC between such stocks. Here, it should be emphasised again that at this early development stage of IC research, the sophistication of the three models discussed should be accredited and criticism should rather be formulated as suggestion for future research. In fact, Edvinsson and Malone themselves seem to recognise that a lack of attention to IC flows could constrain the potential of the IC Navigator:

> "Best of all, we need to show those indicators being continuously modified by other, related, indicators or indices. The result would be the Navigator moving through time, always up-to-the-minute, but also leaving a trail of all of the past minutes to show improvement or decline. This would be a truly dynamic reporting of Intellectual Capital" (Edvinsson and Malone, 1997: 72).

Initial propositions concerning such more "dynamic" approaches to IC measurement, which assigns a central role to flows between different IC categories have been made by Roos and Roos (1997), Roos, Roos, Edvinsson, and Dragonetti (1998), and in particular by Bontis (1999). An in-depth analysis of these propositions would be beyond the immediate scope of this thesis. However, these propositions seem to illustrate and support Edvinsson's notion that "out of human capital grows some kind of structural capital" (Edvinsson, 1997: 368) and should therefore be further investigated and aligned to the ICM theory in general and the Navigator in particular.

6.4.2 A lack of attention to the interaction among the focus areas

The reason for the above could possibly reside in a lack of attention to the interaction among focus areas. It has been emphasised by Edvinsson and Malone, that in contrast to the four dimensions financial, process, customer, as well as renewal/development, which only interact to a certain degree with one another, exclusively the human focus interpenetrates all IC foci. Hence the metaphorical description "soul of the house" for the human focus. The fact that only the human focus connects the different foci of the metaphorical house could be criticised

on the ground that potential sources of IC value enhancement might be obscured or neglected. Particularly at the interface of two or more areas of focus companies might overlook potential sources of IC value enhancement. To illustrate, in the IC Navigator framework, no measure would explicitly account for the interface of customer focus and renewal and development focus. Thus valuable suggestions for the development of products from the side of the customer, which seem to be well conceptualised in Sveiby's framework, could not be conceptualised and might be overlooked in Skandia's.

Recalling Kaplan and Norton's principle of cause-and-effect relationships as discussed in the foregoing chapter, it would appear that this principle lends itself well to capture the interfaces between individual focus areas. In linking the IC Navigator indicators by means of cause-and-effect relationships the potential inadequacies in the example above could be avoided. In the example, both areas of focus (i.e. customer focus/renewal and development focus) would be connected since the "cause" (i.e. customer suggestion) would now be linked to the "effect" (i.e. product development). This would suggest that the Balanced Scorecard principle of cause and effect relationships, which explicitly considers the interface between two or more scorecard perspectives would appear more appealing than the Skandia Navigator approach, where only the human focus area interacts with the other areas of focus. Taking the fact into consideration that the IC Navigator draws partially from Balanced Scorecard insights, it seems unclear why the evidently powerful principle of cause-and-effect relationships, which links the different foci has not been adopted by the Skandia practitioners. Thus, the observable lack of attention to the interaction of the individual areas of focus should clearly be criticised.

6.4.3 Intellectual capital as a debt item

As the analysis has attempted to demonstrate, Edvinsson and Malone suggest that IC is best viewed as a debt item because it can be seen as an investment in the future and would typically be borrowed from stakeholders (Edvinsson, 1997: 367-368; Edvinsson and Malone, 1997: 43). This contention seems to be shared by various authors in the field. For example, Harvey and Lusch have recently suggested that many integral parts of IC, i.e. innovation, brands, patents, knowledge processes and a host of other intangible assets constitute intangible liabilities. These liabilities are typically unrecorded and unrecognised on traditional balance sheets (Harvey and Lusch, 1999).

A fact that seems worth elaborating in this context is Edvinsson and Malone's and Sveiby's conflicting rationale concerning what IC constitutes in corporate balance sheets. As has been delineated in chapter 4, Sveiby suggests an additional invisible balance sheet under the surface of the established and visible balance sheet and recommends to view IC as an asset item that has its own form of counterbalance, i.e. shareholders' invisible equity and obligation. Edvinsson and Malone, in contrast, seem to stick to the traditional balance sheet elaborating on the goodwill of organisations that might be seen as counterbalancing item to IC.

Discernment of which of both approaches might be more applicable to IC theory seems premature at this point in time. It appears that Edvinsson and Malone's as well as Sveiby's rationale would in similar manner have to be refined and grounded in theory in order to be able to judge which of both would be more valid and appropriate. Notwithstanding the danger of premature comments, a fact rendering Sveiby's approach more appealing would be his terminological consistency, i.e. intellectual assets are allocated to the asset side of the invisible balance sheet. At this point of the argumentation, critics might ponder the question whether the active or passive side of the balance sheet is really that important an issue for IC measurement since in any case, a corresponding value is located precisely on the other side as counterbalance.

6.4.4 Inadequate treatment of external environment

It has been emphasised above that the metaphorical house represents, predicated on the author's understanding, an excellent model for illustrating the complexity of ICM. Despite its excellent illustrative format, it could still be criticised on the grounds of minor inconsistencies, primarily on its seemingly inadequate treatment of the external corporate environment.

From an observation of figure 6.1, it would appear that Edvinsson and Malone are aware of the pertinence of the operating environment to corporate success. Closer examination of their analysis, however, reveals that the operating environment is not linked to any of the components of the Navigator. The only constituent of an organisation's external environment to be measured and catered for appears to be the customer focus. Such treatment, which also seems to be characteristic of Kaplan and Norton, as well as Sveiby's approach, arguably

involves a misplaced view on external forces pertaining to corporate performance. This inadequacy could lead to a negligence of other important aspects of the external environment, such as supplier power, competitors (see, e.g. Porter, 1980, 1985, 1998), and societal peer groups holding a stake in corporate activities, both nationally (see, e.g. Moss-Kanter, 1999; Kotler and Andreasen, 1996) as well as internationally (see, e.g. Wartick and Wood, 1998, Roddick, 1991). To this end one might question whether an adoption of the triad categorisation of IC as proposed in chapter 2 would not offer a more appropriate alternative, because the external dimension in this model would accommodate a broader spectrum of external corporate stakeholders.

6.4.5 A critique of the human focus area

The second-last focus of the IC Navigator to be critically discussed is the human dimension. Apparently inspired by Sveiby's theories of know-how companies and the knowledge perspective, Edvinsson and Malone exclusively refer to white collar workers, e.g. salespeople or office goers and do not explicitly incorporate blue collar worker into their categorisation of employees. An exclusive focus on such white collar, or "knowledge workers" seems to characterise contemporary discourse in the IC research realm (see, e.g. Drucker, 1999a, 1999b). The exclusive focus on white collar workers in the categorisation of a firm's employees in the Skandia approach, however, suggests that the immediate relevance of the Navigator could be limited to service companies. To offset this potentially limited applicability and in order to gain wider pertinence, an alternative categorisation approach could be adopted. Particularly useful in this respect seems to be Stewart's approach (Stewart, 1998: 90-91), which has been introduced in chapter 4.

For the purpose of this thesis, it can briefly be elucidated how Stewart's approach could complement the Skandia IC Navigator. Edvinsson and Malone, similarly to Sveiby, propound that all employees of the company would contribute to the overall IC value (Edvinsson and Malone, 1997: 130). This could be motivated by the strong entrenchment of the two frameworks in the service industry, where seemingly all employees contribute to IC value creation. For the purpose of widening the potential of the Skandia IC Navigator beyond the service industry realm, Stewart's generic categorisation approach could be adopted. Recalling Stewart's two-by-two matrices illustrated in figure 4.4 (Stewart's approach to categorise a company's workforce) and figure 4.5 (Managerial directives for addressing the established

categories) suggests that a complementation of Skandia's approach with Stewart's suggestions might constitute a fertile ground for further exploration. The potential benefit thereof might be a clearer view on human capital's direct contribution to IC value creation, across industries.

6.4.6 The usefulness of the intellectual capital index

Last, but not least, the usefulness of the intellectual capital index would need to be scrutinised. As the analysis in this chapter has attempted to demonstrate, the Skandia approach seems to go beyond the Intangible Asset Monitor and the Balanced Scorecard because it ultimately contracts all IC information into one concrete measure, the IC index. Such an IC index should clearly be welcomed to the extent that it would appropriately contract all relevant IC information in one single measure that can be used for external reporting, and benchmarking purposes.

A critique of the sophistication of the Skandia Navigator would need to examine how well this approach fulfils such a purpose. To this end, it must be kept in mind that the Skandia Navigator, in line with the Balanced Scorecard and the Intangible Asset Monitor, would accommodate a great variety of indicators. As was explained in chapter 4, this could be an asset to the extent that such a non-prescriptive approach would leave room to accommodate industry-specific foci and emphases in selecting measures. Attention was also drawn to the speculation that such "laissez faire" practice, while apparently useful for internal purposes, could be less than optimal if IC data is to be used for external reporting. The reason for this conjecture has been ascribed to the importance of comparability in external reporting. To the extent that heterogeneous indicators are used, comparability of IC data could be severely compromised. It has been concluded that while a non-standardised approach to the identification of indicators would certainly represent an asset for internal purposes, it could be a liability for external reporting.

Since the Skandia Navigator seems characterised by the same "laissez faire" approach to the delineation of indicators, its IC index, which would merely be a contracted version of these indicators, would be useful internally, but could be less beneficial externally. This point would need some elaboration. If a company's initial choice of indicators is strongly determined by individual company specific dynamics and foci, it could a priori be precluded

from external comparison. This would be an important observation if one recalls that the purpose of the Skandia Navigator is primarily external reporting, and that it is claimed that their "IC yardstick" can be used not only across industries, but even across sectors of the economy. In fact, an observed company specificity would strongly contradict Edvinsson and Malone's aspirations. According to them,

> "IC vaults the traditional chasm between for-profit and non-profit institutions, for the first time in history we can *compare the value of all institutions in society*. Suddenly you *can* compare apples and oranges – not by looking at the fruit, but at the trees – especially the roots – from which they come" (Edvinsson and Malone, 1997: 174-175, emphases in original).

Bontis, Dragonetti, Jacobsen, and Roos add a new dimension to, and expand, the above by stressing the fact that if an IC approach is extremely flexible, all companies relying on this approach are likely to suggest different variations of the same idea which prohibits any possible comparison (Bontis, Dragonetti, Jacobsen, and Roos, 1999). It would thus appear that a general guideline for constructing an IC report in the form of a standardised framework applicable across industries bears enormous potential for inter-company and even inter-sector comparison. To this end, the construction of such a standardised framework of IC measurement for the purpose of external reporting would constitute an excellent, if not the most important, avenue for the research path ahead.

6.5 Summary

This chapter illustrated and critically discussed the Skandia Navigator, an ICM tool that has been designed by, and specifically for, the Swedish insurance company Skandia. Therefore, chapter 6 could, in many ways be read as a case study of Skandia. It was argued that this would be important, because the emphasis on localised conditions in the Skandia framework could limit its relevance to other companies, particularly those which are not in the service industry in general or the insurance business in particular.

The Skandia Navigator intellectually draws on the two models, which were discussed in the previous two chapters (the Intangible Asset Monitor has been analysed in chapter 4, and the Balanced Scorecard has been examined in chapter 5). Analysis in this chapter revealed that, methodologically, Skandia's Navigator would be a combinatory approach that combines

elements from the models discussed in the previous two chapters. In this sense, the Skandia approach could be seen as an ICM model that accords explicit and detailed attention to the measurement of IC (similarly to the Intangible Asset Monitor) within a wider framework of corporate performance measurement that also considers financial performance (in line with the Balanced Scorecard). An important fact not to be overlooked is that the Skandia IC Navigator goes one step further than these two models in that the most salient indicators are contracted to a single measure, the "IC index." The usefulness of this index, however, could be severely compromised for external reporting purposes, because of the non-standardised approach in delineating individual measures that coalesce in this index. Such wide latitude in selecting measures, while potentially useful for internal purposes due to the flexibility it would offer, could radically impact comparability of IC data across companies.

A last, but important point to be appreciated is the lack of attention to IC flows between the individual building blocks. It should be emphasised that this deficiency is not characteristic of the Skandia approach alone, and would suggest that extant discourse in IC research could be "static" in that it treats IC essentially as a "stock" of assets.

Part III: Summary, concluding observations, and recommendations

Chapter 7: Summary, conclusions, and recommendations

7.1 Introduction

The objective of the study was outlined in chapter 1. The present thesis was designed to contribute to an improved understanding of the concept of ICM by way of conceptually clarifying IC, and a critical analysis of extant approaches of, and tools to, ICM. In view of this purpose, a comprehensive conceptual study was conducted, involving international literature on the subject of IC and its management.

This final chapter is divided into four main sections. Firstly, a summary of the overall conceptual analysis is provided. This is in line with the practice throughout to provide summative evaluation statements at strategic points in the spirit of McNiff, Lomax, and Whitehead (1996). This serves to demonstrate the relevance of the individual parts and chapters to the improvement of an understanding of the concept of ICM. Secondly, the major conclusions, which could be made on the basis of the conceptual study, are outlined. Thirdly, a number of the most salient recommendations are forwarded. Finally, recommendations for further research are presented in ascending order of priority.

7.2 Summary

7.2.1 Part I: Conceptual frame

Part I provided a general introduction to, and conceptual frame of reference for, the concept of ICM by contributing to an improved understanding of the resource ICM seeks to manage, viz. IC. Part I comprised the first three chapters of the present study.

7.2.1.1 Introduction (chapter 1)

The first, introductory chapter briefly sketched relevant trends and discontinuities that seem to characterise corporate competitive environments. The most remarkable result that can be observed from these discontinuities seems to be the increasing importance of IC for corporate success. In view of its importance, it seems natural to accord explicit attention to the

management of this organisational resource. The above insights form the background against which the present study can be viewed and from which the statement of the problem followed. The problem, which motivated the thesis, can be summarised by reference to a conceptual vagueness and obscurity surrounding the concept ICM and the resource it seeks to manage. The indicated divergence in views can be interpreted as a major factor impeding an understanding of ICM. A misplaced view on ICM, however, is likely to have a severe impact on corporate competitive success. Thus, the objective of the study was to contribute to an improved understanding. After the statement of the objective, attention was given to the delineation of the scope. In a subsequent step, the methodology employed for the analysis was introduced, its epistemological implications were outlined, and its adoption justified. Ultimately the approach to structure discussion that followed was presented, in order to provide a framework to guide the reader through the thesis.

7.2.1.2 A preliminary definition and an anatomy of intellectual capital (chapter 2)

A fundamental task for the purpose of this thesis was to establish clarity concerning the definition and anatomy of the resource the phenomenon under investigation seeks to manage, viz. IC. This was considered a worthwhile effort in view of the conceptual vagueness concerning IC, which seems to be prevalent in current analyses in the ICM realm. Apparently no clear consensus has as yet emerged concerning the definition and anatomy of this resource. The divergence in views impairs a proper understanding of ICM. Appropriate conceptualisation of IC can be seen as a fundamental platform from which further investigations concerning its management can be pursued. It would appear that the question of how to manage is compounded by the question of what to manage.

The objective of this chapter was to review and synthesise extant perceptions of IC, with the ultimate aim of contributing to an enhanced understanding of the concept of ICM. Upon analysis, a preliminary definition was given and extant categorisation approaches were synthesised in a threefold classification scheme. The three identified categories of IC were described in terms of their relative emphases and foci. The theoretical investigation in chapter 2 further provided a critical analysis of the benefits and limitations of the proposed classification scheme.

7.2.1.3 *The need to manage IC (chapter 3)*

Before analysis can turn to a critical discussion of extant ICM approaches, it was considered useful to first demonstrate the need for the management of IC through illustration of the generic importance IC assumes in a wide spectrum of industries. This was provided by way of reference to a business case involving the advertising agency Saatchi & Saatchi, as well as by reference to the importance of IC in branches of industry besides the service variety in general and the advertising business in particular.

Analysis of the Saatchi & Saatchi case revealed potential managerial dangers, which can be associated with a focus on corporate financial data at the expense of managing IC. The interpretation of the case study using an IC perspective obviated the importance of the three components of IC, as they emerged from chapter 2, in building and sustaining competitiveness at Saatchi & Saatchi. After highlighting the pertinence of IC and its management for Saatchi & Saatchi, the analysis proceeded to examine the relevance of IC to a variety of industrial settings. Comparison of the market value and book value of selected companies in the manufacturing industry, as well as the knowledge and service industries was made. A replacement value approach was used to show that the gap (i.e. IC) between the market value and the book value of the investigated companies was substantial. Thus, it was acknowledged that to the extent that the book value represents an increasingly diminishing component of the overall market value of many companies, purely financial foci, which typically concentrate on this book value, are inappropriate for many corporate environments. This is indicative of the potential of ICM approaches and tools, whose critical analysis is the content of part II.

7.2.2 Part II: A critical analysis of extant intellectual capital management approaches and tools

Part II consists of chapters 4-6, each focusing on the analysis of one extant ICM approach and tool. The objective of part II was to critically analyse extant ICM approaches and tools, building on the insights as developed in part I. Throughout the three constituent chapters implicit assumptions and individual premises of the individual ICM tools were uncovered. Particular emphasis was given to the inherent limitations of the discussed ICM approaches and the operational environments where each is designed to be deployed. This was done by way of critical examination of their sophistication in attending the anatomy of IC in a wider

context of corporate management. In order to facilitate comparisons and cross-references between the individual approaches and tools, the analyses in the three chapters were structured analogously. An analogous analytical approach seems to suggest that, for the purpose of providing an overall encompassing picture of the discussions, they are best summarised by means of a table. Table 7.1 draws together the most salient insights made throughout the analyses, thereby providing an abridged version of part II.

Table 7.1: A summary of extant intellectual capital management approaches and tools

	Chapter 4: The Intangible Asset Monitor	Chapter 5: The Balanced Scorecard	Chapter 6: The Skandia IC Navigator
Origin	• Designed to meet the specific requirements of a publishing company (Affärsvälden)	• Research at the Nolan Norton institute (KPMG) involving a variety of companies from different industries	• Developed to reflect changes in competitive environment of insurance company (Skandia)
Rationale	• Based on knowledge perspective • Emphasis exclusively on IC • Construction of an "Invisible balance sheet" with IC as asset item	• Guarding the company against suboptimisation • Based on Porterian and information age principles	• Tree metaphor: IC described as root of corporate value creation • IC as debt item on corporate balance sheets
Purpose	• Measuring intangible assets • Involving IC exclusively • Internal as well as external purposes	• Expanded organisational performance measurement tool • Holistic management tool • Financial and non-financial perspectives included • Internal document	• Measuring IC in an integrated framework • Combines financial capital with IC • External reporting
Approach and tool	• Very strong focus on corporate workforce in two building blocks of IC (internal capital and human capital) • Three bases of measurement: growth and renewal, efficiency, stability	• Balanced approach comprising financial and non-financial perspectives • Cause-and-effect relationships link individual perspectives • Identification of outcome measures and performance drivers	• Measuring IC in conjunction with financial capital • Presents sophisticated methodology to calculate overall IC index

Table 7.1:A summary of extant ICM approaches and tools (continued)

Advantages	• Very sophisticated categorisation of corporate customers in terms of intangible revenues they provide • Very relevant to service and know-how companies	• Cause-and-effect relationships link the four scorecard perspective • Explicit focus on financial aspects in a holistic performance measurement framework • Can be deployed into a system for managing IC • Specifically developed for a wide spectrum of industries	• IC index could allow for external comparison between companies and across industries • Useful illustrative format, viz. metaphorical house
Disadvantages	• Strong focus on employees might lead to neglect of important areas of internal capital • Inadequate treatment of external environment, i.e. focus exclusively on customers • Explicit focus on service and know-how companies • Perhaps less relevant to other (e.g. manufacturing) industries • Static, IC flows not incorporated • No overall IC index calculated for external reporting • Not linked to financial capital	• Downplays value of human capital • Inadequate treatment of external environment, i.e. focus exclusively on customers • Restricted to internal use	• Inadequate treatment of external environment, i.e. focus exclusively on customers • Static, IC flows not incorporated • Usefulness of IC index could be limited because of unstandardised approach that underlies the index • Designed specifically for a service company

In summary, chapters 4-6 which constitute part II of the thesis, contributed to an improved understanding of the concept of ICM through systematic analysis and critique of the three most prominent ICM approaches and tools.

7.2.3 Part III: Concluding observations and recommendations

7.2.3.1 Summary, conclusions and recommendations (chapter 7)

The final chapter 7 presents the most salient aspects and insights, which were constructed throughout the study, for an enhanced understanding of the concept of ICM. To this end, firstly, each part was briefly summarised in terms of its constituent chapters. In this summary, for expository purposes, it was considered appropriate to draw together the principal thoughts of chapters 4-6 in a table format, thereby providing an abridged version of part II. In a subsequent step, the major conclusions of the analysis were forwarded. Thirdly, based on the findings of the study a number of recommendations were made, both in terms of recommendations for a better understanding of the concept of ICM, as well as suggestions for the advancement of business applications and theory.

7.3 Conclusions

The major trends and challenges to modern corporate management, which could be discerned from an analysis of the literature, were elaborated in chapter 1. The challenges, each individually and in conjunction, seem to heighten the importance of an appropriate understanding of the concept of ICM. The challenges provided the inspiration to undertake a study to contribute to an improved understanding of the concept by way of conceptually clarifying IC, and providing a critical analysis of extant ICM approaches and tools.

The most salient conclusions made throughout the study, can be itemised in the following manner:

(a) Upon analysis of the prevailing definitions and categorisations of IC, the following preliminary definition of IC was suggested:

Intellectual capital

(i) is an important source of value creation, and thus

(ii) contributes to sustainable competitive advantage;

(iii) constitutes the value gap between book value and market value, which typically

(iv) is invisible in the corporate balance sheet;

(v) has the potential to enhance a company's future earning capability;

(vi) is the sum of tangible and intangible intellectual assets;

(vii) consists of three main building blocks, viz. human capital, internal capital, and external capital;

(viii) is a corporate key success factor and thus an important managerial responsibility is to manage it adroitly.

(b) While divergences concerning the anatomy of IC seem to prevail, current interpretations of the concept can be synthesised. Upon synthesis, IC can be thought of in terms of a triad model, which is composed of three generic constituent parts, viz.

(i) human capital, i.e. the skills, capabilities and competencies of the corporate workforce,

(ii) internal capital, i.e. "what is left in the company when the employees go home," and

(iii) external capital, i.e. customer-, social-, supplier-, competitor-, and other stakeholder relationships, the reputation of a company, as well as the brand equity.

(c) Upon analysis, extant ICM approaches and tools generally seem to be developed for service industries. It was found that this emphasis could limit their relevance to other branches of industry. To the extent that IC appertains to a wider spectrum of industries, and that individual industries would be characterised by considerably different dynamics, such emphasis could be inadequate.

(d) An important question to be contemplated when thinking about ICM, would be a possible explicit linkage of ICM approaches and tools to traditional, i.e. financial measurement systems. It was concluded that a possible error of omission, which a singular focus on IC could make, would be the exact obverse it accuses the traditional, financial, measurement

and management systems of making. To the extent that ICM would ascribe predominance to IC, corporate financial capital could be neglected.

(e) It was found that extant ICM approaches and tools seem to lend themselves for two generic purposes, viz. firstly, internal measurement purposes, and secondly, external reporting purposes. The inherent requirements of each, however, seem to be in conflict:

(i) When used for internal measurement purposes, ICM approaches and tools would need to allow for sufficient latitude in order to accommodate industry, and/or company-specific characteristics and foci.

(ii) When used for external reporting purposes, ICM approaches and tools would need to be fairly standardised, in order to enable comparisons between companies and across industries.

(iii) The above implies that, when both purposes have to be accommodated simultaneously, the requirements inherent in each would need to be balanced.

(f) Extant ICM approaches and tools appear to be "static" in that they account primarily for stocks of IC, rather than for flows of IC between individual categories.

(g) Although the "M" of ICM is commonly interpreted as an abbreviation for management in the current literature, extant approaches and tools to ICM seem to be principally concerned with the measurement, rather than the management, of IC and can thus be referred to as measurement tools and not management tools in the broader sense of the word.

7.4 Recommendations

7.4.1 Recommendations for an improved understanding of the concept of intellectual capital management

Recommendations for an improved understanding of the concept of ICM, based on the analysis in the present thesis could include, but may not be limited to, the following:

(a) The anatomy of IC can best be understood in terms of a triad model, comprising the three generic building blocks, viz. human capital, internal capital and external capital. The three main categories can be further subdivided into several subcategories. A subdivision appears useful, because it would allow individual companies to set specific emphases to suit their particular circumstances and industry characteristics.

(b) In view of possible inadequacies associated with a singular focus on IC in ICM approaches and tools, an appropriate understanding of ICM would view ICM within a broader framework that integrates both IC as well as financial capital. Such appropriate understanding would attribute adequate managerial attention to both constituents of corporate market value in conjunction, rather than focusing on each individually. In this manner, IC as well as the book value could be accommodated.

(c) ICM, as a measurement tool, can be understood as having a dual purpose, in that it could be used for internal measurement as well as external reporting. Inherent in such a dual purpose, however, a trade-off relationship could reside. On the one hand, sufficient sensitivity to industry and/or company-specific requirements would be needed for internal measurement purposes. On the other hand standardisation would be required in order to ensure comparability across companies and/or industries in the case of external reporting.

(d) When referring to current ICM approaches and tools, the "M" of ICM should, contrary to common practice in the literature, be understood as measurement, rather than management. This would be important in order not to overestimate the potential of extant ICM models.

7.4.2 Recommendations for further research

Recommendations for further research would constitute an integral part of a theoretical study to clarify the structure and general approach of emerging concepts. This thesis concludes with the provision of such recommendations in two generic areas, viz. firstly, the advancement of business applications, and secondly, the advancement of theory.

7.4.2.1 Recommendations for the advancement of business applications

The following recommendations for the advancement of business applications can be forwarded:

(a) The relevance of IC in its present form to various industries should be examined. It seems that general agreement exists concerning the fact that IC assumes great pertinence across industries. The individual degrees of pertinence, however, seems to vary. The relative pertinence to diverse industries should therefore be considered, in order to establish the need for an active engagement with the management of the resource IC.

(b) In the present investigation, a further examination of how the three generic building blocks of IC could best be split into subcategories in order to accommodate industry-specific emphases could be made. The suggested approach would allow individual companies to set specific emphases to suit their individual circumstances and industry characteristics in devising ICM initiatives. Such practice would be particularly relevant when ICM is used for internal purposes. It should be remembered, however, that when used for external reporting purposes, the latitude inherent in this approach could be inadequate.

(c) The notion of a consolidation in views on ICM and its possible business applications should be examined. For example, such consolidation should be welcomed to the extent that it offers a universally accepted platform for measuring this resource. The envisaged merits of a universally accepted IC measurement approach seem to include enhanced comparability of corporate success, and benchmarking opportunities across industries and countries, and could be investigated.

(d) For such benchmarking purposes, the development of an "IC index," i.e. strategic pointer that consolidates IC information into one figure representing a company's IC situation would be worthwhile investigating (see, e.g. Roos, Roos, Edvinnson, and Dragonetti). This IC index could be used to supplement and/or extend traditional balance sheets, thereby providing a more comprehensive picture of the two constituents of corporate market value.

(e) In designing approaches and tools to manage IC, companies are advised to consider the inherent benefits and limitations of the three approaches analysed in this study. This would enable them to superimpose selected and useful aspects of individual models, while discarding others, thereby tailoring an individual ICM framework to their particular needs.

7.4.2.2 Recommendations for the advancement of theory

Several perceived shallow areas and inadequate conceptualisations, which could be discerned in the course of this study, would deserve further scholarly efforts. The following list, presented in ascending order of priority, is meant to provide preliminary recommendations for such advancement of theory:

(a) A fundamental step for the advancement of theory would be the validation of the definition and anatomy of IC as it emerged from this study. Analysis revealed that extant perceptions of the resource to be managed through ICM can be synthesised in a threefold categorisation scheme. The synthesised anatomy of IC, as it was presented here, can clearly be criticised on various grounds. It was, inter alia, suggested that a synthesis concerning the constituent components of IC is premature at the present stage of research development in the field. In view of this possible drawback, three interlinked areas of further investigation can be identified:

(i) Firstly, it appears expedient to conduct further analyses into alternative components of IC. It would be critical for further assessment of the synthesised model to scrutinise the appropriateness of the individual building blocks. This analysis should be conducted relative to practical environments where the model is implemented.

(ii) Secondly, the threefold categorisation, while appealing in its conceptual pragmatism, may obscure the merits of an alternative, more comprehensive approach. Put differently, the notion that the three main categories as extrapolated in the present study are exhaustive, should extensively be validated.

(iii) In a subsequent step it may be useful to further establish clarity concerning the overlap of the three (or the appropriate number of) components of IC. This exercise seems beneficial in view of the potential insights it offers concerning an alternative, more discrete classification pattern. In short, it should be scrutinised whether the categories as presented here are mutually exclusive.

(b) In view of possible inadequacies associated with a specific emphasis on companies in the service industry that could be observed in the ICM approaches analysed, it would be beneficial to scrutinise the potential of current approaches to a wider spectrum of companies in diverse industries. If in fact found inadequate for industrial settings other than service, extant approaches should be revised. In revising them, two aspects demand explicit consideration:

(i) Firstly, in designing cross-industry ICM approaches and tools, particular attention should be given to the accommodation of industry and/or company-specific characteristics, using for example Porterian (1980, 1985, 1998) frameworks. Provision should also be made for dynamics inherent in industry structures. It should not be overlooked that such structures are likely to reconfigure over time, thereby possibly affecting the relevance of the frameworks to be designed. This would imply that to be useful for a wider spectrum of industries, such revised ICM approaches and tools would need to allow for sufficient sensitivity in order to accommodate such industry-specific characteristics and dynamics across industries.

(ii) Secondly, in designing such cross-industry ICM approaches and tools, it must be remembered, however, that accommodating sensitivity to industry characteristics could compromise the sophistication of such tools when used for external reporting across industries. ICM tools for external reporting would need to be fairly standardised, in order to allow for comparability across industries and companies. This would imply that in designing approaches and tools for external reporting

purposes, a balance should be sought between sufficient sensitivity to industry-specific characteristics, and standardisation of approach.

(c) Concerning the lack of emphasis on IC flows, in extant ICM approaches and tools, a major contribution would be the design of a dynamic framework within which such flows can be accounted for. Research could take advantage of existing models, but would need to scrutinise their applicability to the ICM context. A particularly attractive approach, which could be adapted for the purpose of accounting for IC flows has been presented by Kaplan and Norton (1992, 1996a) in their well-known Balanced Scorecard. The core principle of "cause-and-effect" relationships within the Balanced Scorecard, which is explicitly designed to link the four scorecard perspectives, seems to offer a feasible starting point for research into IC flows.

(d) The current preoccupation in ICM research with measuring IC, would suggest that an excellent contribution to current theory development could be the delineation of concrete management directives for ICM. Such directives could be based on the insights already gained in extant discourse, and would need to expand the scope of IC measurement beyond its current confines and include the management of this important corporate resource.

(i) Structurally, such management approaches could, as a starting point, consider the three generic building blocks of IC as they emerged from the analysis of the present study.

(ii) In designing approaches for the management of IC, it must be kept in mind that the design of such ICM approaches is likely to differ radically not only with regard to each of the three building blocks of IC, but also with regard to whether such ICM is to be used for internal or external purposes and the industry environment where the tool is to be used.

(iii) Thus, an important starting point for the development of these management approaches would be a clear delineation of their purpose.

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